

# ***PHASE 1 ENVIRONMENTAL SITE ASSESSMENT***

## ***PA HONUA 3 FAMILY HOUSING AREA AND PA HONUA SOUTH RECREATION AREA MARINE CORPS BASE HAWAII, KANEOHE BAY***

*Prepared for*



**Honolulu, Hawaii**

**October 1, 2007**

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## ACRONYMS AND ABBREVIATIONS

ACM	Asbestos-containing material
AIRS	Aerometric Information Retrieval System
AST	Above Ground Storage Tank
ASTM	American Society of Testing and Materials
AUL	Activity and Use Limitation
BA	Bachelor of Art
BTEX	Benzene, toluene, ethylbenzene and xylene
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
COR	Corrective Action Report
DDT	Dichloro-diphenyl-trichlorethane
EAL	Environmental Action Level
EBS	Environmental Baseline Survey
EP	Environmental Professional
ERNS	Emergency Response Notification System
°F	Degrees Fahrenheit
FAA	Federal Aviation Administration
FCC	Federal Communication Commission
FINDS	Facility Index System
FOS	Finding of Suitability
FRS	Facility Registry System
FTTS	FIFRA/TSCA Tracking System
GEN	Generator
HDOH	Hawaii Department of Health
HEER	Office of Hazard Evaluation and Emergency Response, HDOH
HMIRS	Hazardous Materials Incident Response System
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
kg	Kilograms
km	Kilometer
LLC	Limited Liability corporation
LBP	Lead-based paint
lbs	Pounds

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LQG	Large Quantity Generator
LUST	Leaking underground storage tank
m	Meter
MCBH	Marine Corps Base Hawaii
MS	Master of Science
µg/ft <sup>2</sup>	Micrograms per Square Foot
NAVRAMP	Navy Radon Assessment and Mitigation Program
NCDB	National Compliance Data Base System
NFRAP	No Further Remedial Action Planned
NLR	No Longer Report
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NWI	National Wetlands Inventory
PCB	Polychlorinated biphenyl
pCi/L	picoCuries per liter
PE	Professional Engineer
PRG	Preliminary Remediation Goal
RADINFO	Nuclear Regulatory Commission Database of Permitted Nuclear Facilities
RAL	Recommended action level
REC	Recognized Environmental Condition
RCRA	Resource Conservation and Recovery Act
SQG	Small Quantity Generator
SSTS	Section Seven Tracking System
TIGER	Topologically Integrated Geographic Encoding and Referencing System
TIS	Track Info Services, LLC
TRIS	Toxic Release Inventory System
TSCA	Toxic Substances Control Act
TSD	Treatment, Storage, and/or Disposal
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground storage tank
WRCC	Western Regional Climate Center
WRF	Water Reclamation Facility

## **1.0 SUMMARY**

Parsons conducted a Phase I Environmental Site Assessment in conformance with the American Society of Testing and Materials (ASTM) Standard Practice E 1527-05 for the following sites:

- Pa Honua 3 Family Housing Area, also known as the Pa Honua North I and II Family Housing Areas, located at Marine Corps Base Hawaii (MCBH) Kaneohe Bay
- Pa Honua South Recreation Area, adjacent to the Pa Honua 1 and 2 Family Housing Areas, located at MCBH Kaneohe Bay

The Pa Honua 3 Family Housing Area site is approximately 39.215 acres and the Pa Honua South Recreation Area is approximately 3.945 acres. Exhibit 1, Site Map, presents the general location of the sites. Legal descriptions and aerial views of the sites are presented on Exhibit 2, Site Survey Maps.

The Pa Honua 3 Family Housing Area consists of 212 replacement housing units constructed in 2006, which are occupied by Marine Corps personnel and family. The housing units are configured in one-story and two-story duplex buildings. The new homes are of steel frame construction with plywood shear wall sheeting, stucco finish, and concrete tile roofs. Each unit has an attached one-car garage, central air conditioning, solar panels for water heating, and a back porch. A one-story unit was available for inspection.

The Pa Honua South Recreation Area is located adjacent to the Pa Honua 1 and 2 family housing areas. The site consists of an asphalt-paved trail, a tot lot, two basketball courts, a volleyball court, a pavilion, and grass-covered areas. The trail is used for jogging, walking, or biking. A white heavy plastic fence borders the area, which separates it from the shoreline of Kailua Bay.

Ohana Military Communities LLC will be the lessee of the sites and will be the owner of 212 housing units, all of which require no additional work.

Available information for the site and surroundings was collected and evaluated to identify Recognized Environmental Conditions. According to the ASTM Standard Practice E 1527-05, the term Recognized Environmental Conditions (RECs) means “the presence or likely presence of hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.”

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Based on the definition of a REC in the ASTM Standard Practice E 1527-05, the following constitute a REC to the Pa Honua 3 Family Housing Area:

- During construction of the replacement housing units at Pa Honua 3, soils in the area were disturbed from demolition activities. Chlordane impacted soils from “hot spot areas” at the family housing area were consolidated and buried under the basketball court. Post-construction sampling for chlordane, heptachlor, and heptachlor epoxide indicated concentrations below the Tier II EALs. Because other chlorinated pesticides were not sampled, additional soil sampling for pesticides to include dichloro-diphenyl-trichlorethane (DDT), dieldrin and aldrin, is recommended at the family housing area. Pesticides in soil constitute a REC to the Pa Honua 3 Family Housing Area.
- The potential exists for changes in groundwater direction that could result in groundwater impacts at the Quarry Pit Landfill migrating offsite. Potential groundwater impacts from the Quarry Pit Landfill constitute a REC to the sites.

The following is recommended for further environmental investigation:

- Radon testing at Pa Honua 1 and Pa Honua 2 was conducted in December 2004 to May 2005. The report indicated that the highest radon result in Pa Honua 1 was between 2 and 3.9 pCi/L, below the EPA recommended action level of 4 pCi/L. Analysis of the Pa Honua 2 data shows no indication of elevated radon potential in the units tested. Radon testing of all remaining untested units in Pa Honua 1 and Pa Honua 2 was recommended based on the radon potential of the soil type in Pa Honua 1 and based on uncertainties of the soil type in Pa Honua 2. There is no additional information regarding further radon testing at Pa Honua 1. Due to the proximity of Pa Honua 3 to the Pa Honua 1 and 2 housing areas, radon testing at Pa Honua 3 is recommended in accordance with the Navy’s Radon Assessment and Mitigation Program (NAVRAMP) to determine options for managing risk of exposure to radon of housing occupants at Pa Honua 3. The presence of radon is not a REC to the sites, as the term REC is defined in the ASTM Standard 1527-05, because radon is a naturally occurring element in soil and not the result of a release.

A Phase I Environmental Site Assessment does not include any sampling and analysis of potentially contaminated materials. The scope of work of this Phase I Environmental Site Assessment did not specifically include sampling and analysis; therefore, no independent soil or groundwater or other sampling and analyses were conducted.



## **2.0 INTRODUCTION**

### **2.1 PURPOSE**

Parsons conducted a Phase I Environmental Site Assessment in conformance with the ASTM Standard Practice E 1527-05 for the purpose of identifying RECs at the following sites:

- Pa Honua 3 Family Housing Area, also known as the Pa Honua North I and II Family Housing Areas, located at Marine Corps Base Hawaii, Kaneohe Bay
- Pa Honua South Recreation Area, adjacent to the Pa Honua 1 and 2 Family Housing Areas, located at Marine Corps Base Hawaii, Kaneohe Bay

The Pa Honua 3 Family Housing Area is approximately 39.215 acres and the Pa Honua South Recreation Area is approximately 3.945 acres. Exhibit 1, Site Map, presents the general location of the sites. Legal descriptions and aerial views of the sites are presented on Exhibit 2, Site Survey Map.

Exhibit 3 provides the approximate location of the sites on a United States Geological Survey (USGS) topographic map.

The term REC, as defined in ASTM Standard Practice E 1527-05, means the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with applicable laws. The term is not intended to include *de minimis* conditions that generally do not present a threat to human health and the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

### **2.2 PHASE I TASKS**

Parsons performed the following tasks:

#### **2.2.1 Records review**

Available current and historical documents pertinent to environmental activities conducted in or near the site were reviewed. Topics of interest include chemical usage or inventories, waste management records, Resource Conservation and Recovery Act

(RCRA) or Comprehensive Environmental Response Compensation and Liability Act (CERCLA) activities.

#### **2.2.2 Site reconnaissance and Interviews**

Site reconnaissance of the sites to visually and physically observe and document conditions on the property was performed. One single-story duplex unit was inspected. The Pa Honua South Recreation Area was also visited. Interviews were conducted in keeping with the requirements of ASTM Standard Practice E 1527-05 § 7.1-7.2.

#### **2.2.3 File search and records review**

A search of federal, state, and local regulatory agency electronic databases was performed. This database search identifies locations that are regulated under various environmental laws, notably CERCLA, RCRA, and the Toxic Substances Control Act (TSCA). It also identifies locations where a release of hazardous substances has occurred or is suspected.

#### **2.2.4 Historical records review**

A historic information review was conducted to identify all obvious uses of the sites from the present back to the first developed use or 1940, whichever is earlier. Available historical aerial photographs were reviewed, and any locations of activities that may pose an environmental concern to the site were identified.

#### **2.2.5 Evaluate data and prepare report**

Significant findings from the above-stated tasks were summarized, RECs were identified, and recommendations were made for additional site assessment activities, if needed.

### **2.3 SPECIAL TERMS AND CONDITIONS**

- The information and conclusions presented in this report are valid only for the circumstances of the site investigated as described in this report, as of the dates in this report.
- Parsons evaluated the reasonableness and completeness of available relevant information, but does not assume responsibility for the truth or accuracy of any information provided to Parsons by others or for the lack of information that is intentionally, unintentionally, or negligently withheld from Parsons by others.

- After acceptance of this report, if Parsons obtains information that it believes warrants further exploration and development, Parsons will endeavor to provide that information, but Parsons will not be liable for not doing so.

## **2.4 LIMITATIONS AND EXCEPTIONS OF ASSESSMENT**

To achieve the study objectives stated in this report, Parsons based its conclusions on the best information available during the period of the investigation and within the limits prescribed by the ASTM Standard.

No investigative method can completely eliminate the possibility of obtaining partially imprecise or incomplete information. Professional judgment was exercised in gathering and evaluating the information obtained, and Parsons commits itself to the usual care, thoroughness, and competence of the engineering profession.

## **2.5 LIMITING CONDITIONS AND METHODOLOGY USED**

The Phase I Environmental Site Assessment investigations were completed in accordance with the ASTM Standard Practice E 1527-05.

## **2.6 USER RELIANCE**

This report was prepared for Ohana Military Communities, LLC, its Managing Member and other Members of Ohana Military Communities, LLC. It may be relied upon by Ohana Military Communities, LLC, its Managing Member and other Members of Ohana Military Communities, LLC, the United States of America, Department of the Navy,

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and each of their respective officers, directors, employees, affiliates, successors, assigns, legal counsel and advisors.

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## 3.0 SITE DESCRIPTION

### 3.1 LOCATION AND DESCRIPTION OF PROPERTY

The Pa Honua 3 Family Housing Area and the Pa Honua South Recreation Area are located at Latitude (North) 21.44571, Longitude (West) 157.73969. The sites are located in southeastern O'ahu, on MCBH Kaneohe Bay, on the Mokapu peninsula adjacent to Kaneohe Bay. Exhibit 2 provides legal descriptions of the property and a site survey map.

Ohana Military Communities LLC will be the lessee of the sites and will be the owner of 212 housing units, all of which require no additional work.

### 3.2 SITE AND VICINITY CHARACTERISTICS

Table 3-1 provides a description of the properties directly adjacent to the Pa Honua Family Housing Area and the Pa Honua South Recreation Area.

**Table 3-1  
Adjacent Properties**

Direction	Description of Adjacent Properties	
	Pa Honua 3 Family Housing Area	Pa Honua South Recreation Area
North	Mololani family housing area. Pennsylvania Ave. to the northeast	Pa Honua 1 and 2 family housing areas
East	Fort Hase Beach and Kailua Bay	Fort Hase Beach and Kailua Bay
South	Pa Honua 1 and 2 family housing areas, Mokapu Road and several motor pools	Nuupia Ponds
West	Harris Road, Base commissary and Moral, Welfare, and Recreation (MWR) facilities	Pa Honua 1 and 2 family housing areas

### 3.3 DESCRIPTIONS OF STRUCTURES, ROADS, OTHER IMPROVEMENTS ON THE SITE

The Pa Honua 3 Family Housing Area consists of 212 replacement housing units constructed in 2006, which are occupied by Marine Corps personnel and family. The

housing units are configured in one-story and two-story duplex buildings. The new homes are of steel frame construction with plywood shear wall sheeting, stucco finish and concrete tile roofs. Each unit has an attached one-car garage, central air conditioning, solar panels for water heating, and a back porch. A one-story unit was available for inspection.

The Pa Honua South Recreation Area is located adjacent to the Pa Honua 1 and 2 family housing areas. The site consists of an asphalt-paved trail, a tot lot, two basketball courts, a volleyball court, a pavilion, and grass-covered areas. The trail is used for jogging, walking, or biking. A white heavy plastic fence borders the area, which separates it from the shoreline of Kailua Bay.

Access to the housing area is through Mokapu Road and Harris Avenue. On Harris Avenue, the site can be accessed by turning into Irwin Street. On Mokapu Road, the site can be accessed by turning into Dodson St. These roads are two-way asphalt-paved roads. The Pa Honua South Recreation Area is accessed from within the Pa Honua housing areas.

Potable water is supplied to the site through facilities owned and maintained by the City and County of Honolulu Board of Water Supply. Upon entering the base potable water system, the water is chlorinated, fluoridated and tested for fecal coliform and trihalomethanes. Sewage from the site is disposed through a sewer collection system that connects to the MCBH Water Reclamation Facility (WRF). Reclaimed water from the WRF is used for watering the Klipper Golf Course.

### **3.4 INFORMATION REPORTED BY USER REGARDING ENVIRONMENTAL LIENS OR SPECIALIZED KNOWLEDGE OR EXPERIENCE**

#### **3.4.1 Title Records**

The site is currently owned by the Federal government and managed by the Department of Defense. The site was acquired by a Declaration of Taking by the United States on October 1, 1945. The Declaration of Taking indicates that the land was taken “for certain military installations needed to provide adequately for the defense of the Hawaiian Islands, and for related military purposes...” No other activity and use limitations were indicated.

#### **3.4.2 Environmental Liens**

A chain of title was obtained for the site. No information regarding environmental liens was found against the site.

#### **3.4.3 Specialized Knowledge or Experience**

Other than the information provided by the Department of the Navy contained herein, no specialized knowledge or experience was reported or discovered for the site.

#### **3.4.4 Commonly Known or Reasonably Ascertainable Information**

Other than the information provided by the Department of the Navy contained herein, no information was reported concerning commonly known or reasonably ascertainable information.

#### **3.4.5 Valuation Reduction for Environmental Issues**

Ohana Military Communities, LLC has no knowledge of any valuation reduction of the site as a result of any environmental issues.

#### **3.4.6 Owner, Property Manager, and Occupant Information**

Other than the information provided by the Department of the Navy contained herein, no information was reported concerning the owner, property manager, and occupants.

#### **3.4.7 Reason for Performing Phase I**

Ohana Military Communities is entering into a real estate transaction with the United States Navy. This Phase I is performed in accordance with the ASTM Standard E 1527-05 to allow Ohana Military Communities, consistent with good commercial and customary practice, to satisfy the all appropriate inquiry into the previous ownership and use of the property.

#### **3.4.8 Other**

No information was reported by Ohana Military Communities, LLC concerning other issues.

### **3.5 CURRENT USES OF THE PROPERTY**

The Pa Honua 3 Family Housing Area consists of 212 replacement housing units constructed in 2006, which are occupied by Marine Corps personnel and family. The Pa Honua South Recreation Area consists of an asphalt-paved trail, a tot lot, two basketball courts, a volleyball court, a pavilion, and grass-covered areas. The trail is used for jogging, walking, or biking.

### **3.6 PAST USES OF THE PROPERTY**

Historical uses of the property were evaluated through review of databases searched by Track Info Services, LLC (TIS) and presented in an Environmental FirstSearch™ Report.

In 1918, Fort Hase was commissioned and was known as the Kuwaahoe Military Reservation. In 1939, the Navy constructed a small seaplane base and upon its completion, Naval Air Station Kaneohe's role was expanded to include the administration of the Kaneohe Bay Naval Defense Sea Area. After the war, air station activities consisted of limited air operations, a small security detachment, and a federal communications center. In 1951, the station was proposed as an ideal site for combined air-ground team, and the Marines assumed control of the air station activities when naval aviation moved to Barbers Point Naval Air Station. On January 15, 1952, Marine Corps Air Station, Kaneohe Bay was commissioned.

The entire Pa Honua housing area was originally constructed in 1965. Pa Honua 1, directly north of Pa Honua 2 and directly east of Pa Honua 3, was reconstructed in 1997. Pa Honua 2, directly south of Pa Honua 1 and southeast of Pa Honua 3, was reconstructed in 2002. Pa Honua 3 was demolished in 2004 and reconstructed in 2006. As presented in the 1950 aerial photograph (Section 4.4.1), the Pa Honua area was undeveloped prior to construction of housing units. The housing units shown in the historic aerials are not the same housing units present at the site, since the aerial photographs predate the construction of the housing units on the site. Aerial photos were not available prior to 1950.

### **3.7 CURRENT AND PAST USES OF THE ADJOINING PROPERTIES**

Table 3-1 in Section 3.2, *Site and Vicinity Characteristics*, provides a description of the current uses of the adjoining properties. Historical aerial photographs indicate that the adjoining properties to the north and south were primarily used for military family housing purposes. Adjoining properties to the west were primarily used for military purposes. Section 4.5 provides additional information regarding the historical uses of adjoining properties.



## 4.0 RECORDS REVIEW

This section presents information concerning the site and the surroundings from various recorded sources. Electronic databases representing standard environmental record sources and physical setting sources were reviewed. Information pertinent to the site is summarized in this section.

### 4.1 STANDARD ENVIRONMENTAL RECORD SOURCES, FEDERAL AND STATE

Parsons has retained the services of an environmental database company to search applicable regulatory agency lists and standard environmental record sources to identify locations of potential concern within the ASTM Standard Practice E 1527-05 (Standard) minimum search distances. The following summarizes the environmental database report, dated May 24, 2007. Appendix A presents the complete environmental data report. The report includes maps indicating the search distance of 0.125, 0.25, 0.5, and 1 mile (0.2, 0.4, 0.8, and 1.6 kilometers [km]) from the center of the site, which include the ASTM database required search distances of zero, 0.125, 0.25, 0.5, and 1 mile (zero, 0.2, 0.4, 0.8, and 1.6 km).

The following subsections summarize sites listed within the respective database search distances. Exhibit 4 presents the location of the mapped sites relative to the site.

#### 4.1.1 Federal ASTM Records

##### National Priorities List

The National Priorities List (NPL) listing, also known as the Superfund list, is a subset of the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) database. The NPL database identifies over 1,200 sites nationwide for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As a result, the environmental database company provides coverage for over 1,000 NPL site boundaries produced by the USEPA Environmental Photographic Interpretation Center.

Currently, there are no listed NPL sites located within the 1-mile (1.6-km) search distance from the site.

##### Comprehensive Environmental Response, Compensation, and Liability Information System

The CERCLIS database contains data on potentially hazardous waste sites that have been reported to USEPA by states, municipalities, private companies, and private persons. Notification to USEPA is made pursuant to Section 103 of the Comprehensive

Environmental Response, Compensation, and Liability Act (CERCLA). The CERCLIS database contains sites that are either proposed to be on or on the NPL, and sites that are in the screening and assessment phase for possible inclusion on the NPL.

Currently, there are no listed CERCLIS sites located within the 0.5-mile (0.8-km) search distance from the site.

#### **CERCLIS – No Further Remedial Action Planned**

Beginning in February 1995, CERCLIS sites designated No Further Remedial Action Planned (NFRAP) have been removed from the CERCLIS database. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action of NPL consideration. USEPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived these as historical records so that USEPA does not needlessly repeat the investigations in the future.

Currently, there are no listed CERCLIS-NFRAP sites located within the 0.5-mile (0.8-km) search distance from the site.

#### **Resource Conservation and Recovery Act / Corrective Action Report**

The Corrective Action Report (RCRA COR) database identifies hazardous waste handlers with RCRA action activity. The database shows which nationally defined corrective action core events have occurred for every handler that has currently or previously had corrective action activity.

Currently, there are no listed RCRA COR sites within the 1-mile (1.6-km) search distance from the site.

#### **Resource Conservation and Recovery Act information System/Treatment, Storage, and/or Disposal**

The Resource Conservation and Recovery Act Information System/ Treatment, Storage and/or Disposal (RCRA TSD) database list identifies those facilities or locations that have notified USEPA of their activities relative to their onsite treatment, storage, and/or disposal of hazardous wastes. A listed site does not necessarily indicate environmental problems at the site but rather that the site is (or was) engaged in hazardous waste

activities; therefore, it may have the potential to cause environmental degradation if hazardous wastes have been mishandled or otherwise released in an uncontrolled manner.

Currently, there are no RCRA TSD sites within the 0.5-mile (0.8-km) search distance from the site.

### **Resource Conservation and Recovery Act / Quantity Generators**

The Resource Conservation and Recovery Act Information System Sites / Quantity Generators (RCRA GEN) is a database of facilities that generate or transport hazardous waste or meet other RCRA requirements. Two categories of RCRA GEN are usually considered. Large Quantity Generators (LQGs) list identifies those facilities or locations that have notified USEPA that they generate (or have generated) at least 2,200 lbs (998 kg) of non-acutely hazardous wastes and/or 2.2 lbs (1 kg) of acutely hazardous waste, monthly. Small Quantity Generators (SQGs) list identifies those facilities or locations that have notified USEPA that they generate (or have generated) less than 2,200 lbs (998 kg) of non-acutely hazardous wastes and/or 2.2 lbs (1 kg) of acutely hazardous waste, monthly. A listed site does not necessarily indicate environmental problems on the site, but rather that the site is (or was) engaged in hazardous waste activities; therefore, it may have the potential to cause environmental degradation if hazardous wastes have been mishandled or otherwise released in an uncontrolled manner.

Currently, there are no listed RCRA GEN sites within the 0.25-mile (0.4 km) search distance from the site.

### **Resource Conservation and Recovery Act / No Longer Report**

The Resource Conservation and Recovery Act Information Sites / No Longer Report (RCRA NLR) is a database of facilities not currently classified by the USEPA but is still included in the RCRIS database. The reasons for non classification are: (1) Failure to report in a timely matter; (2) No longer in business at the listed address, and/or (3) No longer generating hazardous waste materials in quantities which require reporting.

Currently, there are no listed RCRA NLR sites within the 0.12-mile (0.2 km) search distance from the site.

### **Emergency Response Notification System**

The Emergency Response Notification System (ERNS) is a USEPA national computer database system that is used to store information on the sudden and/or accidental release of hazardous substances, including petroleum, into the environment. The ERNS reporting system contains preliminary information on specific releases, including the spill location, the substance released, and the responsible party. The ERNS report only includes releases from 1988 to the most recent quarterly update.

Currently, there are no ERNS sites within the 0.12-mile (0.2 km) search distance from the site.

### **National Pollutant Discharge Elimination System**

The National Pollutant Discharge Elimination System (NPDES) is a database of permitted facilities receiving and discharging effluents to and from a natural source where treatment of the effluent is monitored.

Currently, there are no NPDES sites with the 0.25-mile (0.4 km) search distance from the site.

### **Facility Index System**

The Facility Index System (FINDS) is a database maintained by USEPA/National Technical Information Service that contains both facility information and “pointers” to other sources or more detailed information. The FINDS is the index of identification numbers associated with a property or facility which the USEPA has investigated or has been made aware of in conjunction with various regulatory programs. Each record indicates the USEPA office that may have files on the site or facility. A Facility Registry System (FRS) site has an FRS in the status field.

Currently, there are no FINDS sites within the 0.25-mile (0.4-km) search distance from the site.

### **Toxic Release Inventory System**

The Toxic Release Inventory System (TRIS) is a USEPA database that identifies all facilities that have had or may be prone to toxic material releases.

Currently, there are no TRIS sites within the 0.25-mile (0.4-km) search distance from the site.

### **Wetlands**

The US Fish and Wildlife Service maintains a National Wetlands Inventory (NWI) database of information summarizing characteristics, extent, and status of the Nation's wetlands and deepwater habitats. This database is available for select areas of the United States.

There are no wetlands within the 0.5-mile (0.8-km) search distance from the site. Designation as a wetland is not an indication of an environmental discharge, violation or concern.

### **Floodplains**

The Floodplains is a database maintained by the Federal Emergency Management Agency which summarizes 100 year and 500 year floodplain boundaries for select counties in the United States.

Currently, there are no Floodplains sites within the 0.5-mile (0.8-km) search distance from the site.

### **Receptors**

The sensitive receptors are listed by the 2002 Census Bureau's TIGER (Topologically Integrated Geographic Encoding and Referencing System), from the US Department of Commerce. This database summarizes all schools and hospitals that may house individuals deemed sensitive to environmental discharges due to their fragile immune systems.

Currently, there are no receptors listed within the 0.12-mile (0.2-km) search distance from the site.

### **Nuclear Permits**

The Nuclear Regulatory Commission of the USEPA maintains a database of permitted nuclear facilities (RADINFO). This database provides basic information about facilities that are permitted and regulated for their use and handling of radioactive materials.

Currently, there is no Nuclear Permit on record within the 0.5-mile (0.8-km) search distance of the site.

#### **4.1.2 State of Hawaii ASTM Records**

##### **Underground Storage Tanks**

The Underground Storage Tanks (REG UST/AST) is a database identifying underground and aboveground storage tanks in the state of Hawaii. This database is maintained by the HDOH.

Currently, there are no REG UST/AST sites listed within the 0.25-mile (0.4-km) search distance from the site.

##### **Leaking Underground Storage Tanks**

The Leaking Underground Storage Tanks (LUST) is a database identifying underground and above ground storage tanks that have been leaking, and is maintained by the HDOH.

Currently, there are no LUST sites within the 0.5-mile (0.8-km) search distance from the site.

#### **4.1.3 Non-ASTM Supplemental Records**

##### **Historic/Landmark**

The National Park Service maintains a National Registry of Historic Places database. This database contains the Nation's official list of cultural resources worthy of preservation. Properties listed include districts, sites, buildings, structures, and objects that are significant in American history, architectures, archeology, engineering, and culture.

Currently, there are no Historic/Landmark sites within the 0.5-mile (0.8-km) search distance from the site.

##### **Federal Land Use**

The Federal Lands of the United States is a database of lands owned or administered by the Federal Government, including the Bureau of Land Management, the Bureau of Reclamation, the US Department of Agriculture Forest Service, the Department of Defense, the US Fish and Wildlife Service, the Tennessee Valley Authority, and other agencies. Only areas of 640 acres or more are included in this listing. The database provides descriptive information that includes name and type of the Federal land and the administering agency. Indian Lands of the United States is a database of areas administered by the Bureau of Indian Affairs and exceeding 640 acres in size. This database includes Federally-administered lands within a reservation which may or may not be considered part of the reservation. Endangered Species Protection Program is a

database that provides a list of the Endangered Species by county and the species status.

This site is considered a Federal Land Use site. Designation as a Federal Land Use site indicates that the Federal government owns and/or operates the land. This designation does not constitute a REC.

### **Federal Wells**

The USGS maintains a database of more than 850,000 records of wells, springs, test holes, tunnels, drains, and excavations in the United States. This database is an inventory of the United States Groundwater Sites.

Currently, there are no Federal Wells sites within the 0.5-mile (0.8-mile) search distance from the site.

### **Releases (Air/Water)**

The USEPA has a list of Air and Surface Water Releases. This list is a subset of the ERNS-National Response System database detailing sites that have impacted only the air or surface water.

Currently, there are no Releases (Air/Water) within the 0.12-mile (0.2-km) search distance from the site.

### **Hazardous Materials Incident Response System**

The Hazardous Materials Incident Response System (HMIRS) is a database of information regarding materials, packaging, and a description of events for tracked incidents.

Currently, there are no HMIRS sites within the 0.12-mile (0.2-km) search distance from the site.

### **National Compliance Database System**

The National Compliance Data Base System (NCDB) is a database of regional compliance and enforcement activity and manages the Pesticides and Toxic Substances compliance and Enforcement program at a national level. The system tracks all compliance monitoring and enforcement activities from the time an inspector conducts an inspection until the time the inspector closes the case or settles the enforcement

action. NCDB is the national repository of the 10 regional and Headquarters FIFRA/TSCA Tracking System (FTTS). Data collected in the regional FTTS is transferred to NCDB to support the need for monitoring national performance of regional programs.

Currently, there are no NCDB sites within the 0.25-mile (0.4-km) search distance from the site.

### **PADS**

The USEPA maintains a database of polychlorinated biphenyl (PCB) handlers. This database includes PCB generators, transporters, storers and/or disposers that are required to register with the USEPA. This database indicates the type of handler and registration number. Also included is the PCB Transformer Registration Database.

Currently, there are no PADS sites within the 0.25-mile (0.4-km) search distance from the site.

### **Federal Other**

Section Seven Tracking System (SSTS) within the USEPA maintains a database of registration and production data for facilities which manufacture pesticides. Aerometric Information Retrieval System (AIRS) is another database of detailed information pertaining to sites which submit air emissions reports. Developed under the Clean Air Act, this database also maintains data on compliance status and enforcement actions.

Currently, there is no Federal Other site within the 0.25-mile (0.4-km) search distance from the site.

### **Towers**

Towers is a database that encompasses three sources of information from the Federal Aviation Administration (FAA) and the Federal Communication Commission (FCC). FAA data includes the Digital Obstacle File which contains obstruction data for man made objects that affect domestic aeronautical charting products. FCC data includes the Wireless Telecommunication Bureau's Universal Licensing System which contains the Antenna Structure Database and the Cellular Tower Database. FCC data also includes the Mass Media Bureau's Consolidated database System which includes engineering data for AM, FM, and Television broadcasting stations.



Currently, there is a Sprint PCS tower within the 0.25-mile (0.4-km) search distance from the site. The telecommunication tower does not constitute a REC to the site.

### **Radon**

The USEPA collected radon data from 1990-1991 national radon project. This project collected data for a variety of zip codes across the United States. The radon data listed here is based on the radon data collected for this site's zip code.

The database report indicates the presence of radon in the area in concentrations between 1.6 and 1.9 picoCuries/liter (pCi/L). Radon information for the Hawaiian Islands indicates that the USEPA has categorized Hawaii as Zone 3 for radon. A Zone 3 classification is for areas with indoor average radon levels of less than to 2 picoCuries/liter (pCi/L). This is below the USEPA radon recommended action level (RAL) of 4 pCi/L.

## **4.2 ENVIRONMENTAL AGENCY RECORDS**

Findings from the environmental database review did not reveal any RECs resulting in the need for further review of agency records.

The Office of Hazard Evaluation and Emergency Response (HEER) of the HDOH maintains lookup spreadsheets for releases and sites of interest. These spreadsheets were reviewed on May 23, 2007 and the site is currently not listed as a site of interest. There are two listed releases that have occurred on MCBH Kaneohe Bay. The first release occurred on March 15, 2000 and consisted of a 100-gallon spill of jet fuel that was contained in the built-in secondary containment of a tanker truck. The spill was pumped into a bowser and later processed through an oil-water separator. The spill occurred at the fueling pits and not at the Pa Honua 3 Family Housing Area or the Pa Honua South Recreation Area. No further action was indicated for this release event. The second release occurred on February 20, 2006 and consisted of a million-gallon raw sewage discharge from the base's water reclamation facility. The HEER referred this release event to the Clean Water Branch of the HDOH. These releases did not affect the Pa Honua 3 Family Housing Area or the Pa Honua South Recreation Area, and do not constitute RECs to the sites.

## **4.3 NAVY RECORDS AND DOCUMENTS**

### **4.3.1 2007 Environmental Condition of Property (ECP)**

The ECP reports that pesticides/herbicides were legally applied to control various pests and plants on MCBH and that prior sampling confirms their presence in soils at various locations on base. Pesticides/herbicides in soil constitute a REC to the site.

The ECP also indicates that IR Site 2 (Quarry Pit Landfill) is an area of concern since all required remedial actions have not yet been taken. (Refer to Section 4.3.3 for further discussion on the Quarry Pit Landfill).

Five former USTs were located west of the sites across Harris Road. Remediation is required at four of the five tank locations and no further action is needed at the fifth tank. Due to their distance from the sites, these former UST contamination sites do not constitute a REC to the sites.

### **4.3.2 2006 Environmental Baseline Survey**

Application of waste oil as a dust suppressant along the road ways within the vicinity of the site may have occurred, potentially resulting in a pre-existing condition. This was reported to have been a common practice at other military installations. Since no documentation can be found to support that this practice occurred at the sites, this does not constitute a REC to the sites.

The Environmental Baseline Survey (EBS) reports that the southern edge of the site borders Site 1002, the Mokapu Peninsula Fishpond Complex, also known as Nuupia Ponds. The site has been determined to be eligible for listing in the National Register of Historic Places. Because of the presence of this site, the southern edge of the site is assessed to be within the high archaeological sensitivity zone in the MCBH Integrated Cultural Resources Management Plan (ICRMP).

The EBS reports that radon testing of the housing neighborhoods in MCBH Kaneohe Bay was recently completed in calendar years 2004 and 2005. Radon levels in the units tested within the site did not exceed EPA action levels. However, the study did not cover all the units in the neighborhood and further testing was recommended.

The EBS also indicates that the northern portion of the Pa Honua South Recreation Area (athletic facilities) is within the Federal Emergency Management Agency's Flood Zone VE [special flood hazard area subject to inundation by a 100-year flood with additional hazards due to velocity (wave action)].

#### **4.3.3 Site Inspection Report, Quarry Pit Landfill**

The Quarry Pit Landfill is located approximately 500-feet west of the site. A groundwater investigation was conducted at the site in 1989. Eight monitoring wells were advanced and sampled. Benzene, toluene, ethylbenzene and xylenes (BTEX), naphthalene and 2-Methylnaphthalene were detected in groundwater sampled from Well MW-5. Well MW-5 is upgradient of the landfill, located downgradient of the base gas station, and the gas station is the likely source of groundwater contaminants at MW-5 according to the site inspection report. 1,1-dichloroethene was detected in groundwater sampled from Well MW-6. However, all other wells had no detections of contaminants. The impacts were reported to be localized and not migrating. Although the report concluded that wastes disposed of at the landfill pose no threat to human health and the environment, that there is no significant contamination of the groundwater, and that no further action is necessary, the potential exists for changes in groundwater direction that could result in groundwater impacts at the Quarry Pit Landfill migrating offsite. Potential groundwater impacts from the Quarry Pit Landfill constitute a REC to the sites.

#### **4.3.4 Integrated Natural Resources Management Plan**

The Marine Corp Base Hawaii Integrated Natural Resources Management Plan and Environmental Assessment (MCBH INRMP, MCBH 2001) served as a reference for endangered species data in the Kaneohe Bay area. The four resident native waterbird species observed primarily at Kaneohe Bay wetlands that are federally listed endangered species are of special protection concern [e.g., Hawaiian stilt (*ae'o*, *Himantopus mexicanus knudseni*), Hawaiian gallinule (*'alae 'ula*, *Gallinula chloropus sandvicensis*); Hawaiian Coot (*'alae ke'oke'o*, *Fulica americana alai*), and Hawaiian duck (*koloa moali*, *Anas wyvilliana*)]. The growing colony of wedge-tailed shearwaters (*Puffinus pacificus chlororhynchus*) nesting in the eastern sand dune of the pond shoreline is also of special protection concern. There are no naturally-occurring plant species currently found at Kaneohe Bay that are identified as listed endangered species.

In addition to the diverse marine organisms of concern hosted in marine waters of Mokapu's 500-yard buffer zone (e.g., coral colonies, sponges, bryozoans, sabellid worms, tunicates, and 200 fish species), there are several species of marine animals in the waters off-shore of MCBH Kaneohe Bay that have been declared threatened or endangered by the federal government and are of special protection concern. These include threatened green sea turtles (*Chelonia mydas*), the endangered hawksbill turtle (*Eretmochelys imbricata*), the endangered Hawaiian monk seal (*Monachus schauinslandi*), and the endangered humpback whale (*Megaptera novaeangliae*). Of these species, there have been several documented "false nest" attempts by sea turtles along Mokapu shoreline beaches, but these turtles regularly swim and feed in Mokapu's nearshore waters. Hawaiian monk seals infrequently haul

out to rest along Mokapu shoreline beaches on the northwest and northeast coastline either side of Pyramid Rock.

#### **4.3.5 Radon Testing Report for U.S. Marine Corps Base Hawaii Housing**

Pa Honua 3 was under construction at the time of the radon survey conducted from December 2004 to May 2005. The report indicated that the highest radon result in Pa Honua 1 was between 2 and 3.9 pCi/L, below the EPA recommended action level of 4 pCi/L. Analysis of the Pa Honua 2 data shows no indication of elevated radon potential in the units tested. Radon testing was recommended following completion of construction of Pa Honua 3. Radon testing of all remaining untested units in Pa Honua 1 and Pa Honua 2 was also recommended based on the radon potential of the soil type in Pa Honua 1 and based on uncertainties of the soil type in Pa Honua 2. There is no additional information regarding further radon testing at Pa Honua 1.

Due to the proximity of Pa Honua 3 to the Pa Honua 1 and 2 housing areas, radon testing at Pa Honua 3 is recommended in accordance with the Navy's Radon Assessment and Mitigation Program (NAVRAMP) to determine options for managing risk of exposure to radon of housing occupants at Pa Honua 3.

The presence of radon is not a REC to the sites, as the term REC is defined in the ASTM Standard 1527-05, because radon is a naturally occurring element in soil and not the result of a release.

#### **4.4 PHYSICAL SETTINGS SOURCE(S)**

##### **4.4.1 USGS Topographic Map**

Exhibit 3 presents the location of the site on a USGS topographic map.

##### **4.4.2 Geological, Hydrogeological, and Meteorological Review**

###### **Geology**

The island of O'ahu originated from the remnants of two shield volcano mountain ranges, with the older Waianae Mountain Range on the west and the younger Koolau Range on the east. MCBH Kaneohe Bay is located on the Mokapu peninsula, adjacent to Kaneohe Bay and downgradient from the Koolau mountain range. Three volcanic vents are present on the peninsula from the Honolulu Volcanic Series. These include the Ulupau cone (tuff cone) to the East, Puu Hawaiiloa (cinder cone and lava flow) in the center of the peninsula and Pyramid Rock (lava flow) at the northern tip of the peninsula (Macdonald, 1983). Except for these features, the topography in the area rises from sea level to some 100 feet above mean sea level. Geologic formations in the area include

coral reef deposits, sedimentary deposits and underlying basalt flows as well as tuff and cinder cones.

### **Hydrogeology**

The depth to groundwater here is anticipated at elevations close to mean sea level. On the Mokapu peninsula, two aquifer types are present: upper basal (fresh water in contact with sea water) unconfined aquifers in sedimentary deposits and a lower basal confined aquifers in dike deposits (Mink and Lau, 1990).

### **Meteorology**

The site is located within the Kaneohe area of O'ahu. Meteorological studies and investigations from a weather station located at Kaneohe Mauka have indicated that the average high of 83.2 degrees Fahrenheit (°F) occurs during the summer months and a low of 65.3°F occurs in the winter months. The average annual maximum temperature is 79.8°F. Rainfall occurs year-round, providing an average annual rainfall of 76.0 inches (1.93 m) of rain (WRCC, 2006).

## **4.5 HISTORICAL USE INFORMATION**

### **4.5.1 Aerial Photographs**

Copies of aerial photographs of the sites and surrounding areas were obtained for the years 1950, 1969, 1990 and 1998 from TIS. These photographs are presented in Appendix B. The following historical information was identified on the aerial photographs:

1950: The sites were undeveloped except for a road or pathway bisecting the entire Pa Honua area. Areas adjacent to the Pa Honua area were undeveloped except for roads or pathways.

1969: The Pa Honua 3 Family Housing Area is developed with military family housing. The westernmost portions of the Pa Honua South Recreation Area is developed also with military family housing. The Mololani housing area is located immediately to the north of Pa Honua 3. South of Pa Honua 3 is more residential housing that was part of the original Pa Honua housing area, and is now called Pa Honua 1 and 2. Military use facilities are located to the west of the site. The photograph also shows the area for the base commissary has been cleared.

1990: The photograph is similar to the 1969 photograph, except south of the site is not visible. A few additional military structures are visible to the east of the site before the Kailua Bay shoreline begins.

1998: The photograph is similar to the 1990 photograph, except west of the site is not visible. A few additional military structures are visible to the east of the site before the Kailua Bay shoreline begins.

#### ***4.5.2 Historic Topographic Maps***

Copies of historic topographic maps of the site and surrounding areas were obtained for the years 1959, 1968, 1983 and 1998 from TIS. These maps are presented in Appendix C. The site development as recorded on the historic topographic maps is closely aligned with the development presented in the historical aerial photographs.

#### ***4.5.3 Fire Insurance Maps***

Sanborn® fire insurance maps were not available for the site.

#### ***4.5.4 Recorded Land Title Records***

The site is currently owned by the Federal government and managed by the Department of Defense. Declaration of taking by the United States government for military use was made on October 1, 1945.

#### ***4.5.5 Building Department Records***

The site is currently owned by the Federal government and managed by the Department of Defense. Parsons coordinated with the Navy during the site reconnaissance and records search. Information regarding date of construction and subsequent modifications to structures was reviewed and incorporated into this assessment from information provided by the Navy and available on the Internet, and from other documents provided by the Design contractor.

#### ***4.5.6 Zoning/Land Use Records***

The zoning designation for the site is F-1, Military and Federal.

## **5.0 INFORMATION FROM SITE RECONNAISSANCE AND INTERVIEWS**

Parsons conducted reconnaissance of the sites on May 29 and 31, 2007. The Pa Honua 3 Family Housing Area consists of 212 newly constructed military family housing units for Marine Corps personnel and their dependents. One housing unit was available for inspection. The Pa Honua South Recreation Area is used by the housing area residents for athletics and various purposes.

### **5.1 HAZARDOUS SUBSTANCES IN CONNECTION WITH IDENTIFIED USES**

During the site reconnaissance in May 2007, hazardous substances were not observed at the sites.

### **5.2 HAZARDOUS SUBSTANCE CONTAINERS AND UNIDENTIFIED SUBSTANCE CONTAINERS**

During the site reconnaissance in May 2007, hazardous substance or unidentified substance containers were not observed at the sites.

### **5.3 STORAGE TANKS**

During the site reconnaissance in May 2007, there were no storage tanks observed at the sites.

### **5.4 INDICATIONS OF PCBS**

During the site reconnaissance in May 2007, pad-mounted power transformers and fluorescent lighting were observed. PCB-free labels on the transformers were observed. Due to the recent construction of the housing units on site (year 2006), exterior and interior fluorescent lighting is of a newer, ballast-free design, and is assumed to be PCB-free.

### **5.5 INDICATIONS OF ASBESTOS**

Due to the recent construction of the housing units on site (year 2006), asbestos-containing materials (ACM) are not expected to have been used in the construction of these units. According to Navy personnel (as communicated to Ohana Military Communities, LLC), the specification for the construction of the housing units specifically prohibited the use of ACM.

## **5.6 INDICATIONS OF SOLID WASTE DISPOSAL**

During the site reconnaissance in May 2007, minimal domestic trash (litter) was observed at the sites.

## **5.7 PHYSICAL SETTING ANALYSIS, IF MIGRATING HAZARDOUS SUBSTANCES ARE AN ISSUE**

Section 4.1 summarizes potential concerns regarding nearby sites that may have an impact on the sites, and Section 4.4 summarizes the physical setting.

## **5.8 WETLANDS AND FLOODPLAINS**

The Nuupia Ponds located south of the sites are wetlands. The northern portion of the Pa Honua South Recreation Area, where the athletic facilities are located, is considered a floodplain.

## **5.9 LEAD**

Based on the recent construction of the housing units at Pa Honua 3, LBP is assumed to not be present in housing units at the site. According to Navy personnel (as communicated to Ohana Military Communities, LLC), the specification for the construction of the housing units specifically prohibited the use of LBP.

## **5.10 ENDANGERED SPECIES AND SENSITIVE ENVIRONMENTS**

### ***5.10.1 Endangered Species***

No endangered species were observed during the site reconnaissance.

### ***5.10.2 Sensitive Environments***

No sensitive environments were observed during the site reconnaissance.

## **5.11 INTERVIEWS**

In May, July, and August 2007, representatives of Marine Corps Base Hawaii and Naval Facilities Engineering Command, Pacific and Region Hawaii, were contacted. The following lists these individuals and their titles. Information provided by these individuals has been incorporated throughout this report as appropriate.

(b) (6) MCBH Kaneohe Bay Housing Manager

(b) (6) MCBH Kaneohe Bay Housing Inspector



(b) (6)	MCBH Installation Restoration Program Manager
(b) (6)	Environmental Engineer, NAVFAC Pacific, Environmental Compliance Program
(b) (6)	Environmental Engineer, NAVFAC Pacific, Hazardous Waste Program
(b) (6)	Environmental Engineer, NAVFAC Pacific, Air Quality and National Environmental Policy Act
(b) (6)	Certified Industrial Hygienist, NAVFAC Pacific, Asbestos/Lead-Based Paint
(b) (6)	Environmental Engineer, NAVFAC Region Hawaii, Installation Restoration Program

#### **5.11.1 Hawaii Department of Health**

The HDOH was contacted in August 2007 regarding ongoing environmental investigations and compliance actions at the family housing areas at MCBH Kaneohe Bay. The inquiry was referred by (b) (6), Remedial Project Manager at the HEER, to (b) (6), the Installation Restoration Program Manager at MCBH. In addition, (b) (6) of the HEER was also contacted regarding the HDOH's database of Activity and Use Limitations (AULs). Information received from (b) (6) on 7 September 2007 indicated that of the military family housing areas at MCBH Kaneohe Bay, only the Waikulu neighborhoods of Rainbow Court and NCO Row are currently required to manage soils in accordance with the Pesticide Soils Management Plan, dated February 2007. The HDOH considers the Pesticide Soils Management Plan as constituting Land Use Control.

#### **5.12 OTHER CONDITIONS OF CONCERN**

No indications of termite infestation were observed during the site reconnaissance.

During construction of the replacement housing units at Pa Honua 3, soils in the area were disturbed from demolition activities. Chlordane impacted soils from "hot spot areas" at the family housing area were consolidated and buried under the basketball court. Post-construction sampling for chlordane, heptachlor, and heptachlor epoxide indicated concentrations below the Tier II EALs. Because other chlorinated pesticides were not sampled, additional soil sampling for pesticides to include dichloro-diphenyl-

***PHASE I ENVIRONMENTAL SITE ASSESSMENT  
PA HONUA 3 FAMILY HOUSING AREA and  
PA HONUA SOUTH RECREATION AREA  
MARINE CORPS BASE HAWAII, KANEOHE BAY***

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trichlorethane (DDT), dieldrin and aldrin, is recommended at the family housing area. Pesticides in soil constitute RECs to the site.

## 6.0 FINDINGS

### 6.1 FINDINGS SUMMARY

Based on the definition of a REC in the ASTM Standard Practice E 1527-05, the following constitute a REC to the Pa Honua 3 Family Housing Area:

- During construction of the replacement housing units at Pa Honua 3, soils in the area have been disturbed from demolition activities. Chlordane impacted soils from “hot spot areas” at the family housing area were consolidated and buried under the basketball court. Post-construction sampling for chlordane, heptachlor, and heptachlor epoxide indicated concentrations below the Tier II EALs. Because other chlorinated pesticides were not sampled, additional soil sampling for pesticides to include dichloro-diphenyl-trichlorethane (DDT), dieldrin and aldrin, is recommended at the family housing area. Pesticides in soil constitute a REC to the Pa Honua 3 Family Housing Area.
- The potential exists for changes in groundwater direction that could result in groundwater impacts at the Quarry Pit Landfill migrating offsite. Potential groundwater impacts from the Quarry Pit Landfill constitute a REC to the sites.

The following is recommended for further environmental investigation:

- Radon testing at Pa Honua 1 and Pa Honua 2 was conducted in December 2004 to May 2005. The report indicated that the highest radon result in Pa Honua 1 was between 2 and 3.9 pCi/L, below the EPA recommended action level of 4 pCi/L. Analysis of the Pa Honua 2 data shows no indication of elevated radon potential in the units tested. Radon testing of all remaining untested units in Pa Honua 1 and Pa Honua 2 was recommended based on the radon potential of the soil type in Pa Honua 1 and based on uncertainties of the soil type in Pa Honua 2. There is no additional information regarding further radon testing at Pa Honua 1. Due to the proximity of Pa Honua 3 to the Pa Honua 1 and 2 housing areas, radon testing at Pa Honua 3 is recommended in accordance with the Navy's Radon Assessment and Mitigation Program (NAVRAMP) to determine options for managing risk of exposure to radon of housing occupants at Pa Honua 3. The presence of radon is not a REC to the sites, as the term REC is defined in the ASTM Standard 1527-05, because radon is a naturally occurring element in soil and not the result of a release.

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## 7.0 OPINION

Based on the findings of our assessment, Parsons provides the following opinions on the observed conditions:

- **Pesticides** - During construction of the replacement housing units at Pa Honua 3, soils in the area have been disturbed from demolition activities. Chlordane impacted soils from “hot spot areas” at the family housing area were consolidated and buried under the basketball court. Post-construction sampling for chlordane, heptachlor, and heptachlor epoxide indicated concentrations below the Tier II EALs. Because other chlorinated pesticides were not sampled, additional soil sampling for pesticides to include dichloro-diphenyl-trichlorethane (DDT), dieldrin and aldrin, is recommended at the family housing area. It is the opinion of the EP that pesticides in soil constitute a REC to the sites.
- **USTs** - Five former USTs were located west of the sites across Harris Road. Remediation is required at four of the five tank locations and no further action is needed at the fifth tank. Due to their distance from the sites, it is the opinion of the EP that these former UST contamination sites do not constitute a REC to the sites.
- **Quarry Pit Landfill** - The potential exists for changes in groundwater direction that could result in groundwater impacts at the Quarry Pit Landfill migrating offsite. It is the opinion of the EP that potential groundwater impacts from the Quarry Pit Landfill constitute a REC to the sites.
- **Radon** - Radon testing at Pa Honua 1 and Pa Honua 2 was conducted in December 2004 to May 2005. The report indicated that the highest radon result in Pa Honua 1 was between 2 and 3.9 pCi/L, below the EPA recommended action level of 4 pCi/L. Analysis of the Pa Honua 2 data shows no indication of elevated radon potential in the units tested. Radon testing of all remaining untested units in Pa Honua 1 and Pa Honua 2 was recommended based on the radon potential of the soil type in Pa Honua 1 and based on uncertainties of the soil type in Pa Honua 2. There is no additional information regarding further radon testing at Pa Honua 1. Due to the proximity of Pa Honua 3 to the Pa Honua 1 and 2 housing areas, radon testing at Pa Honua 3 is recommended in accordance with the Navy’s Radon Assessment and Mitigation Program (NAVRAMP) to determine options for managing risk of exposure to radon of housing occupants at Pa Honua 3. It is the opinion of the EP that radon is not a REC to the sites, as the term REC is defined in the ASTM Standard 1527-05, because radon is a naturally occurring element in soil and not the result of a release.

- Waste Oil - The EBS reports that the application of waste oil as a dust suppressant along the roadways within the vicinity of the site may have occurred, potentially resulting in a pre-existing condition. This was reported to have been a common practice at other military installations. Since no documentation can be found to support that this practice occurred at the sites, it is the opinion of the EP that this does not constitute a REC to the sites.

## **8.0 CONCLUSIONS**

Parsons has conducted this Phase I Environmental Site Assessment in accordance with the American Society for Testing and Materials Standard Practice E 1527-05, *Standard Practice for Environmental Site Assessments: Phase I Environmental Assessment Process* of the Pa Honua 3 Family Housing Area and the Pa Honua South Recreation Area, located on MCBH Kaneohe Bay.

### **8.1 GENERAL CONCLUSIONS**

Per the findings above, the following RECs were identified: 1) pesticides, including chlordane, DDT, dieldrin and aldrin; and 2) potential groundwater impacts migrating to the sites from the Quarry Pit Landfill.

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## **9.0 DEVIATIONS AND DATA GAPS**

### **9.1 DEVIATIONS**

There were no deviations in the performance of this Phase 1 environmental site assessment.

### **9.2 DATA GAPS**

There were no data gaps identified for this site.

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## 10.0 REFERENCES

*Aquifer Identification and Classification for Oahu: Groundwater Protection Strategy for Hawaii*, Mink, John F. and Lau, Stephen L., February 1990 (Revised).

Environmental Condition of Property to Support Hawaii Public-Private Venture Housing Phase 4, Marine Corps Base Hawaii Housing Areas: Mololani, Pa Honua 3 and Ulupau, Kaneohe Bay, Hawaii. Naval Pacific Engineering Command, Pacific. July 2007.

Finding of Suitability to Support Hawaii Public-Private Venture Housing Phase 4, Marine Corps Base Hawaii Housing Areas: Mololani, Pa Honua 3 and Ulupau, Kaneohe Bay, Hawaii. Naval Pacific Engineering Command, Pacific. July 2007.

Final Report Environmental Baseline Survey for Public Private Venture Action, Various Marine Corps Base Hawaii Housing Areas: MCBH Kaneohe Bay, MCBH Camp H. M. Smith and MCBH Manana Family Housing Areas, Oahu, Hawaii. August 2006.

Final Finding of Suitability for Public Private Venture Action, Various Marine Corps Base Hawaii Housing Areas: MCBH Kaneohe Bay, MCBH Camp H.M. Smith and MCBH Manana Family Housing Areas, Oahu, Hawaii for Naval Facilities Engineering Command Pacific Division. August 2006.

Headquarters Engineering and Construction News *World Class Technical Capabilities*, Volume 3, Number 9, U.S. Army Corps of Engineers, June 2001.

<http://www.hawaii.gov/health/environmental/hazard/records.html>. Accessed May 23, 2007.

<http://www.wrcc.dri.edu/>.

Marine Corp Base Hawaii Integrated Natural Resources Management Plan and Environmental Assessment (MCBH INRMP/EA), Marine Corps Base Hawaii, Prepared by: (b) (6) Environmental Department, Marine Corps Base Hawaii, November 2001.

Oak Ridge National Laboratory. Radon Testing Report for U.S. Marine Corps Base Hawaii Housing. Prepared for Naval Facilities Engineering Command Pacific, Environmental Compliance Division. January 17, 2007.

Ohana Repair Cost and Inventory Database. Ohana Military Communities, LLC, Hawaii. August 2006.

Personal communication between (b) (6) of the Hawaii Department of Health and (b) (6) of Parsons. August 6, 2007.

**PHASE I ENVIRONMENTAL SITE ASSESSMENT  
PA HONUA 3 FAMILY HOUSING AREA and  
PA HONUA SOUTH RECREATION AREA  
MARINE CORPS BASE HAWAII, KANEOHE BAY**

---

Personal communication between (b) (6) of MCBH and (b) (6) of Parsons. August 13, 2007.

Personal communication between (b) (6) Ohana Military Communities LLC / (b) (6), Parsons and (b) (6), MCBH Kaneohe Bay Housing Office, July 13, 2007.

Personal communication between (b) (6), Ohana Military Communities LLC / (b) (6), Parsons and (b) (6), NAVFAC Pacific / (b) (6), NAVFAC Region Hawaii, May 30, 2007.

Personal communication between (b) (6), Hawaii Department of Health and (b) (6), Parsons, August 24, 2007.

Site Inspection, Quarry Pit Landfill, Marine Corps Air Station, Kaneohe Bay, Hawaii. Prepared for NAVFAC Pacific. Harding Lawson Associates. 20 September 1989.

TIS. Environmental FirstSearch™ Report. February 11, 2006.

TIS. Environmental FirstSearch™ Report. May 24, 2007.

TIS. Historical Aerial Photograph Report February 28, 2006.

TIS. Historical Topographic Map Report. March 6, 2006.

*Volcanoes in the Sea, The Geology of Hawaii*, Second Ed., Macdonald et. al., 1983.

## 11.0 DECLARATION BY ENVIRONMENTAL PROFESSIONALS

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in Section 312.10 of Title 40, Code of Federal Regulations (CFR), Part 312 dated 1 November 2005.

We have the specific qualifications based on education, training and experience to assess a property of the nature, history and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR 312.

Signature:

Date:

(b) (6)

October 1, 2007

(b) (6), P.E.

(b) (6)

October 1, 2007

(b) (6), P.E.

(b) (6)

October 1, 2007

(b) (6)

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**PHASE I ENVIRONMENTAL SITE ASSESSMENT  
PA HONUA 3 FAMILY HOUSING AREA and  
PA HONUA SOUTH RECREATION AREA  
MARINE CORPS BASE HAWAII, KANEOHE BAY**

---

**12.0 QUALIFICATION(S) OF ENVIRONMENTAL PROFESSIONAL(S)**

<b>Name</b>	<b>Degree</b>	<b>Years of Experience</b>	<b>Project Responsibilities</b>
(b) (6), P.E.	M.S., Chemical Engineering	29	Site reconnaissance, data review and report preparation
(b) (6), P.E.	M.S., Chemical Engineering	28	Site reconnaissance, data review and report preparation
(b) (6)	B.A., Environmental Studies	6	Site reconnaissance, data review and report preparation
	B.A., Anthropology		

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EXHIBIT 1  
SITE MAP

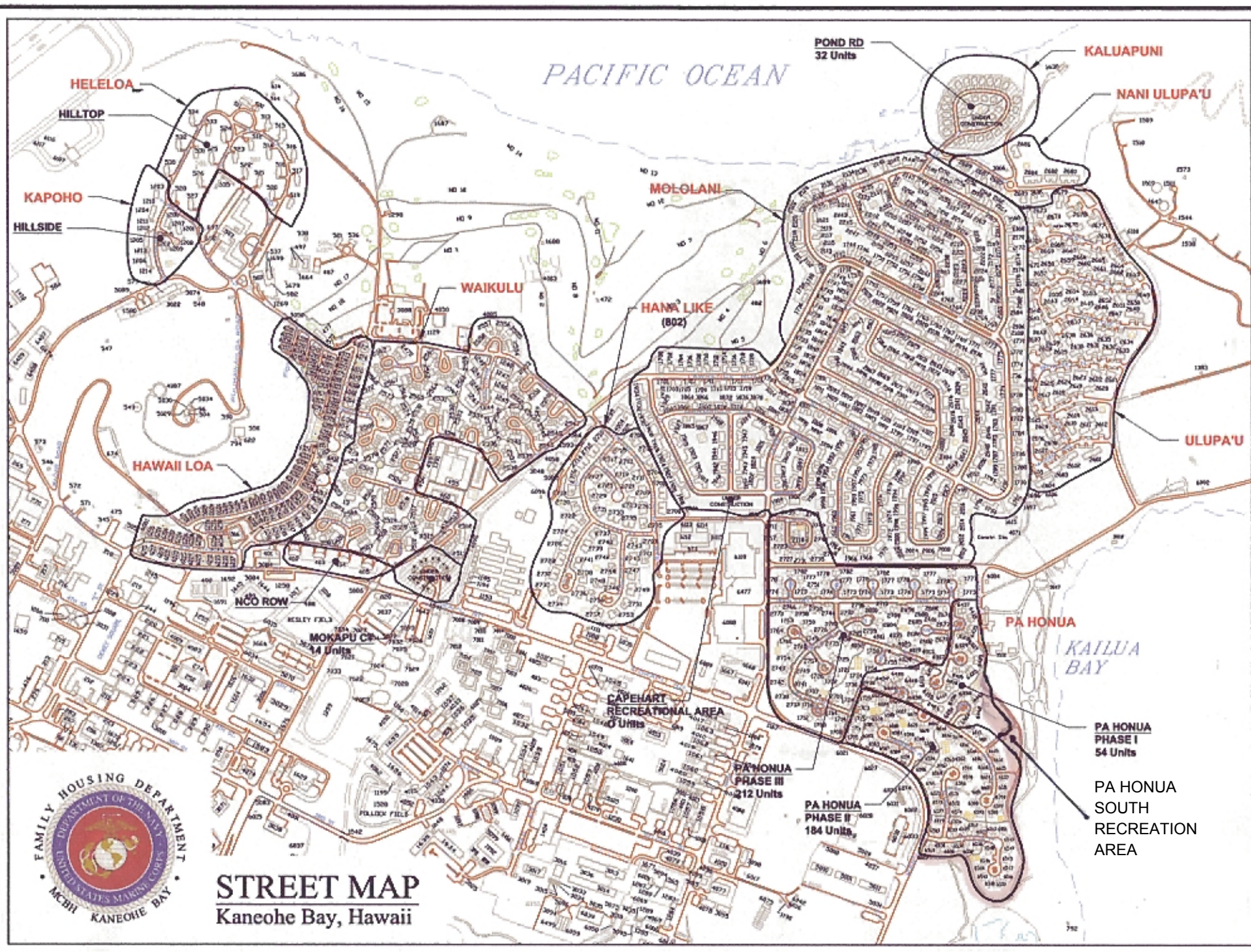
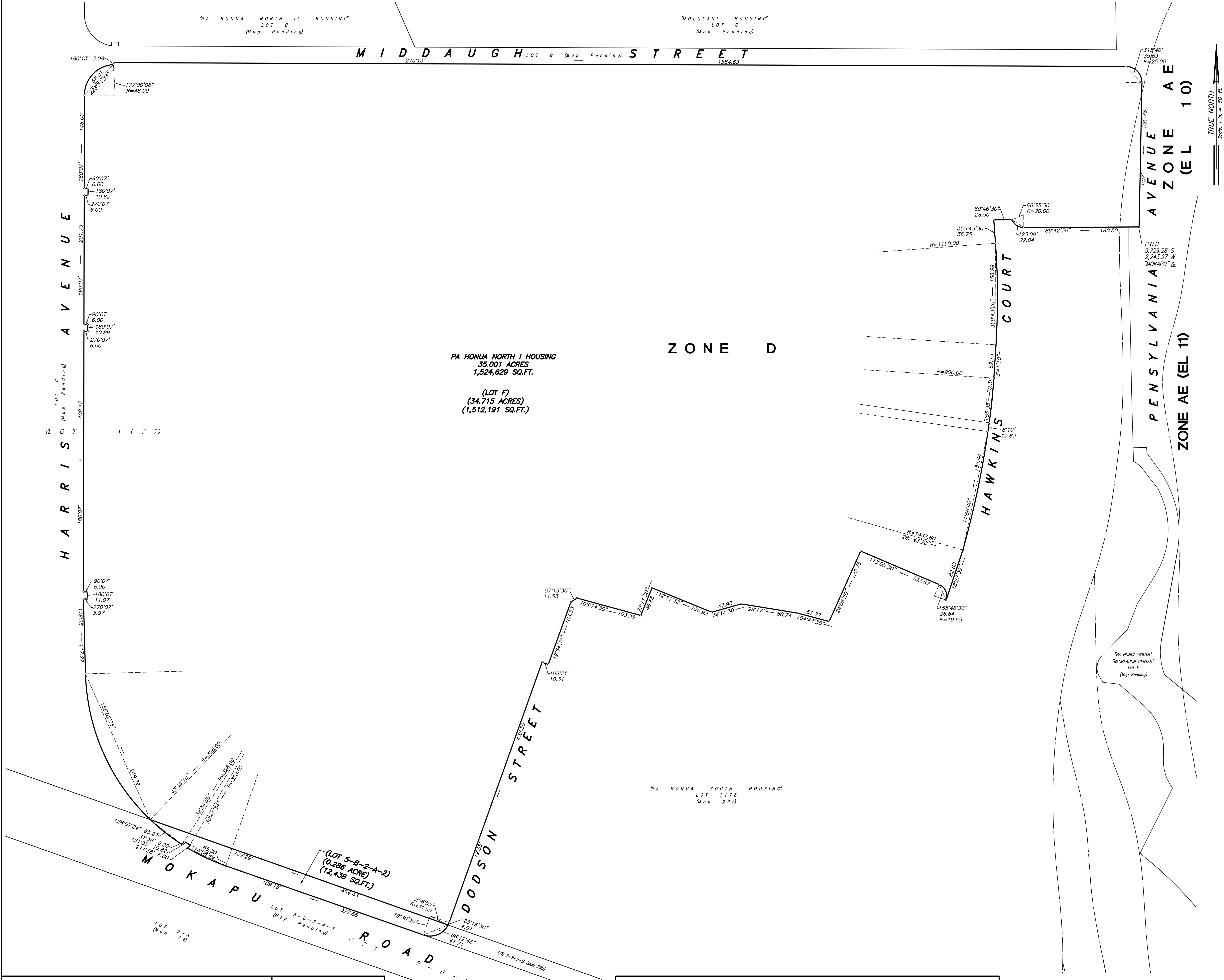


EXHIBIT 2  
SITE SURVEY MAPS







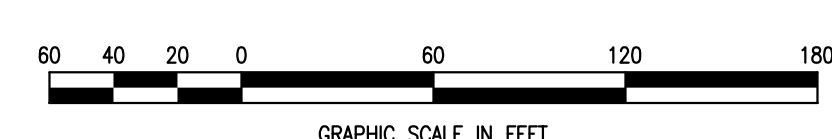
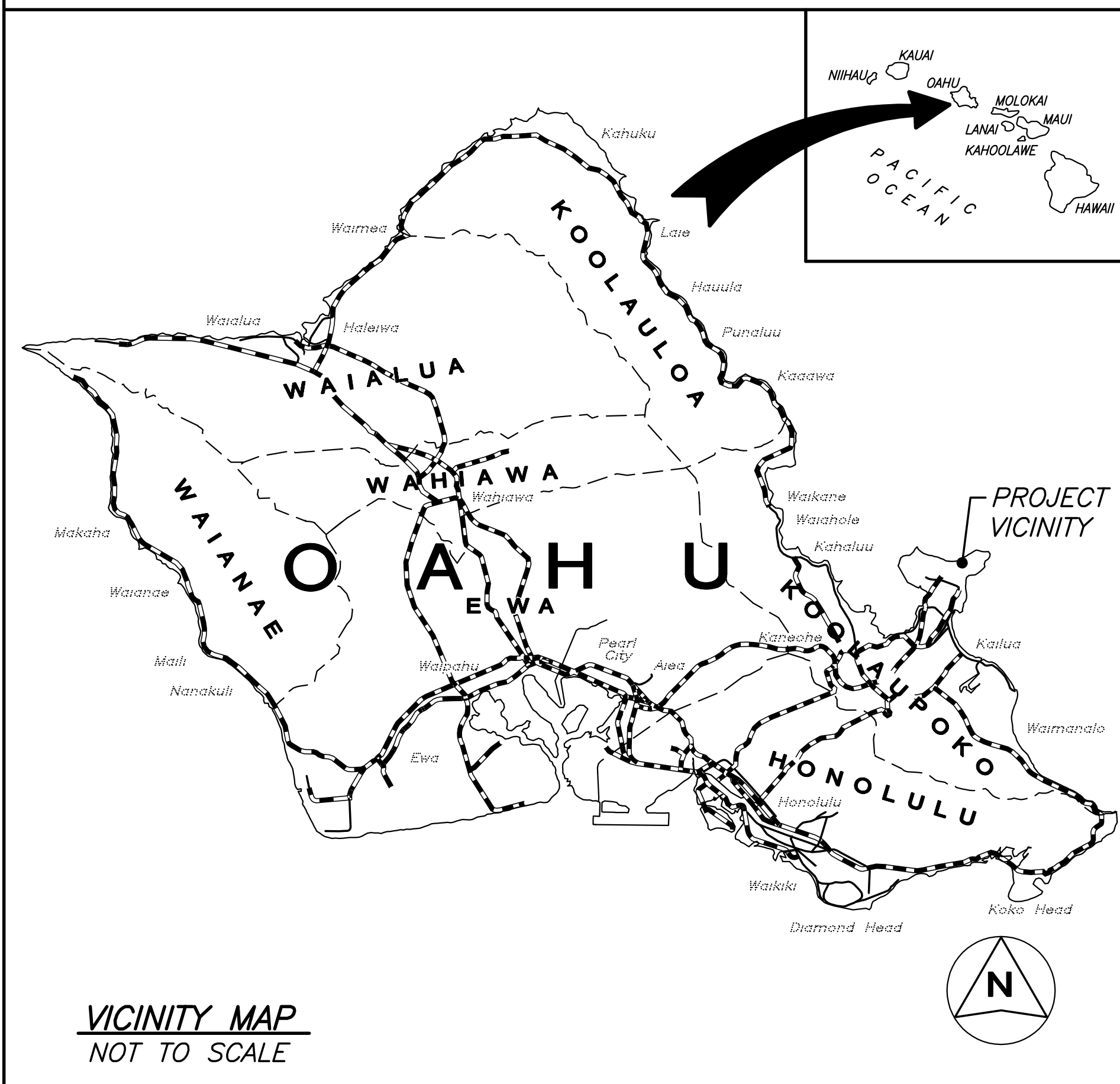


MODIFIED ALTA/ACSM LAND TITLE SURVEY

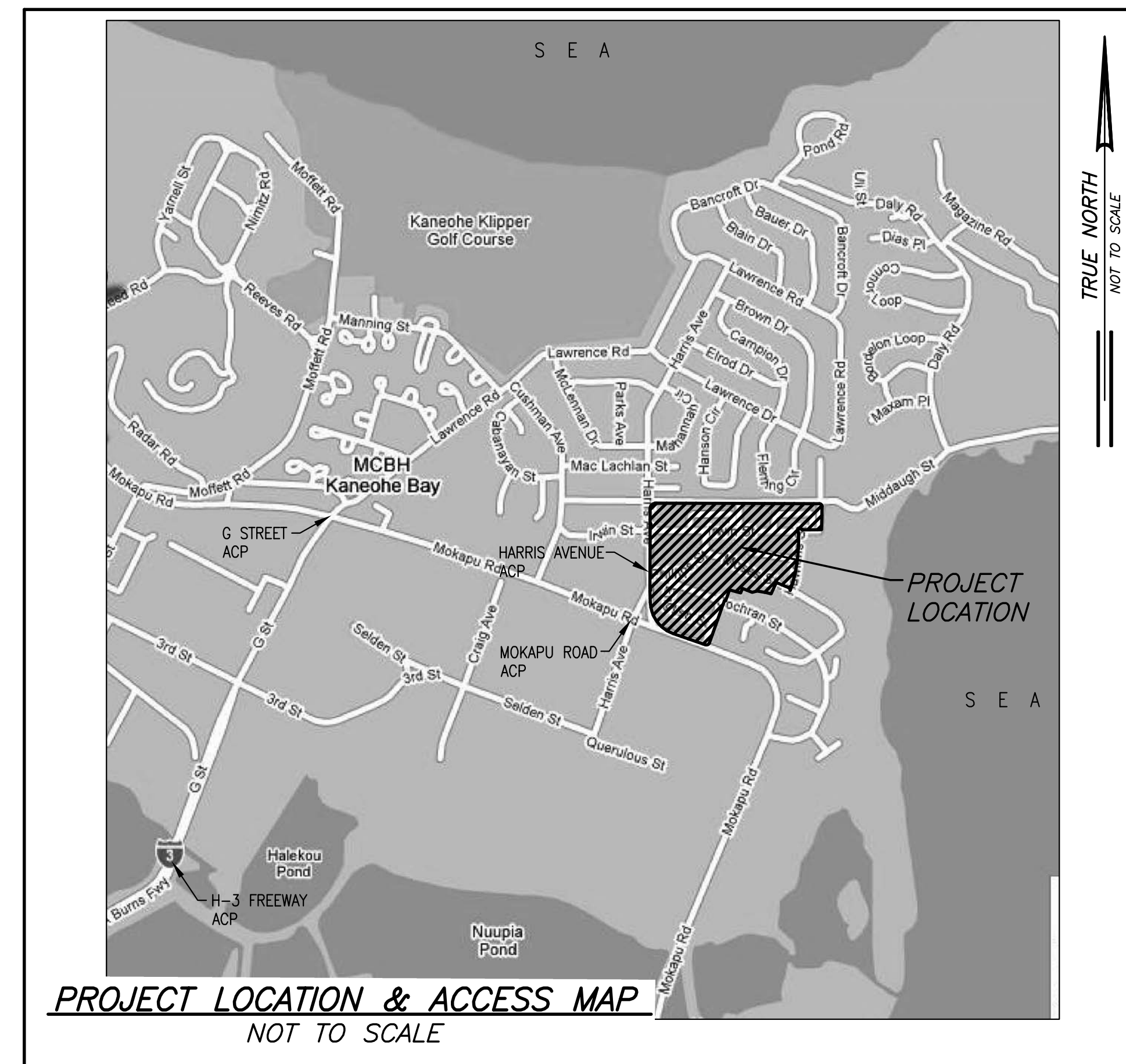
"PA HONUA NORTH I HOUSING"  
BEING LOTS F AND 5-B-2-A-2  
AS SHOWN ON PENDING MAP  
OF LAND COURT APPLICATION 677

KANELOHE, KOOLAUPOKO, OAHU, HAWAII  
TAX MAP KEY: (1ST DIV.) 4-4-09: portion 03

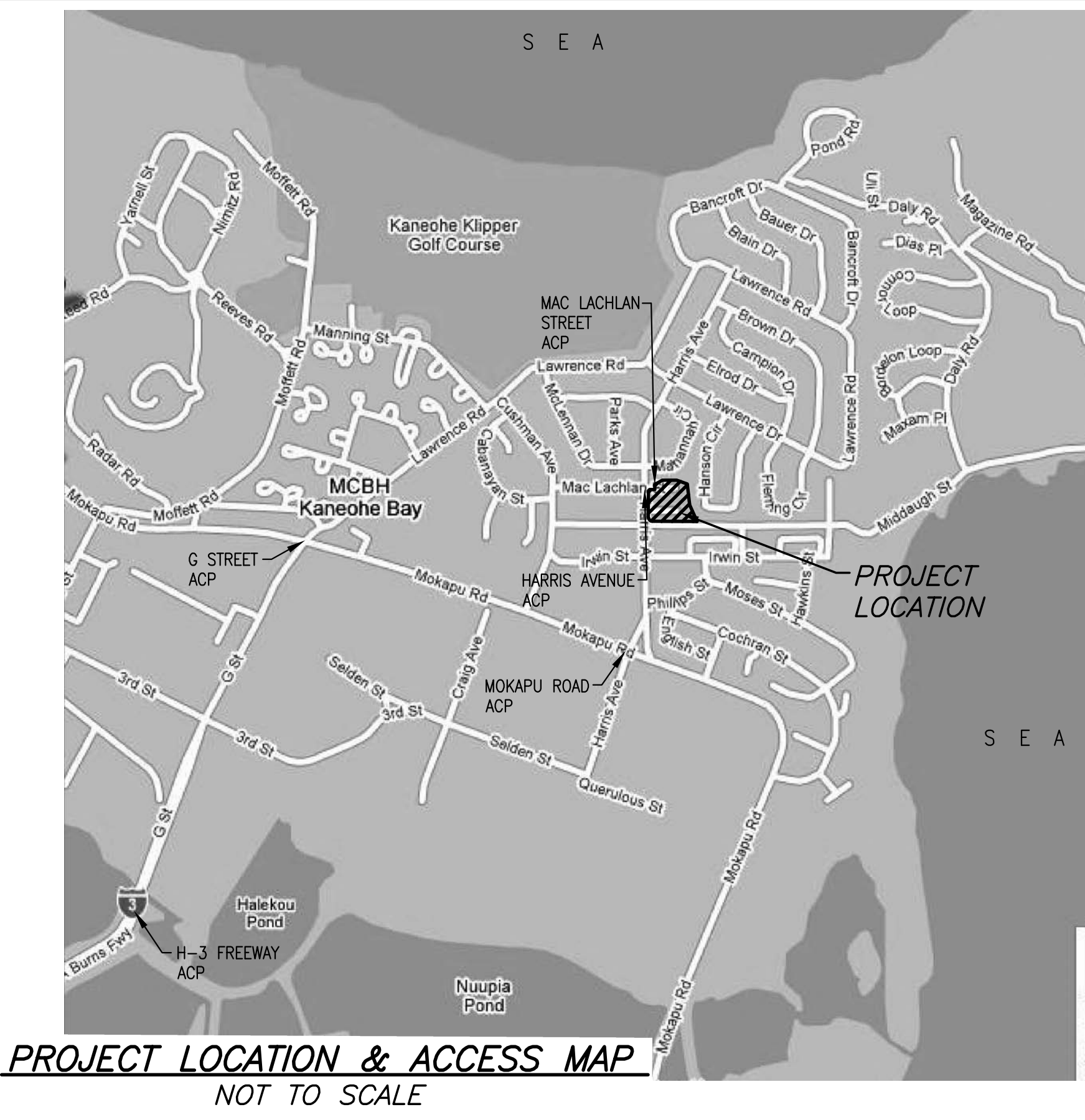
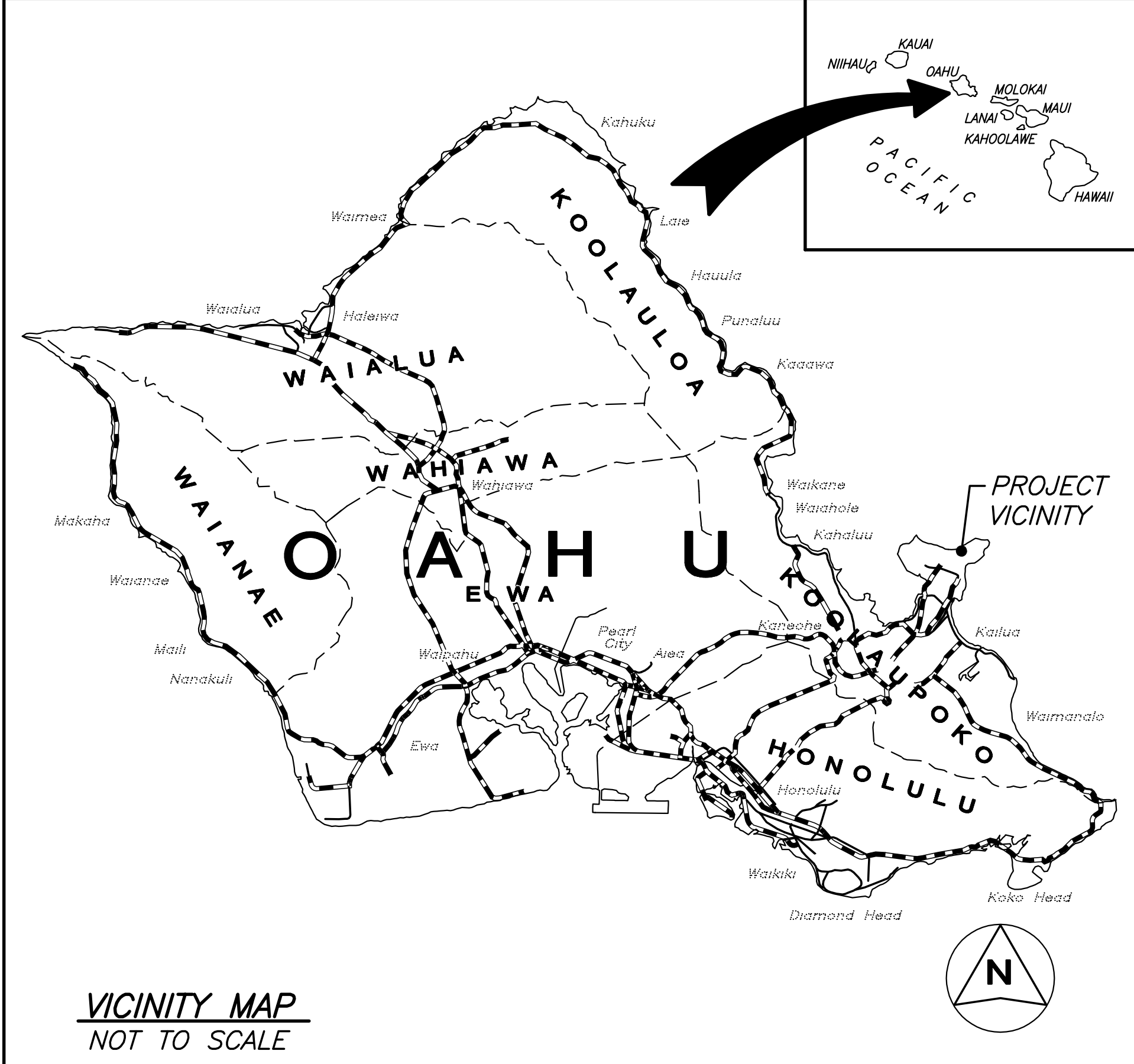
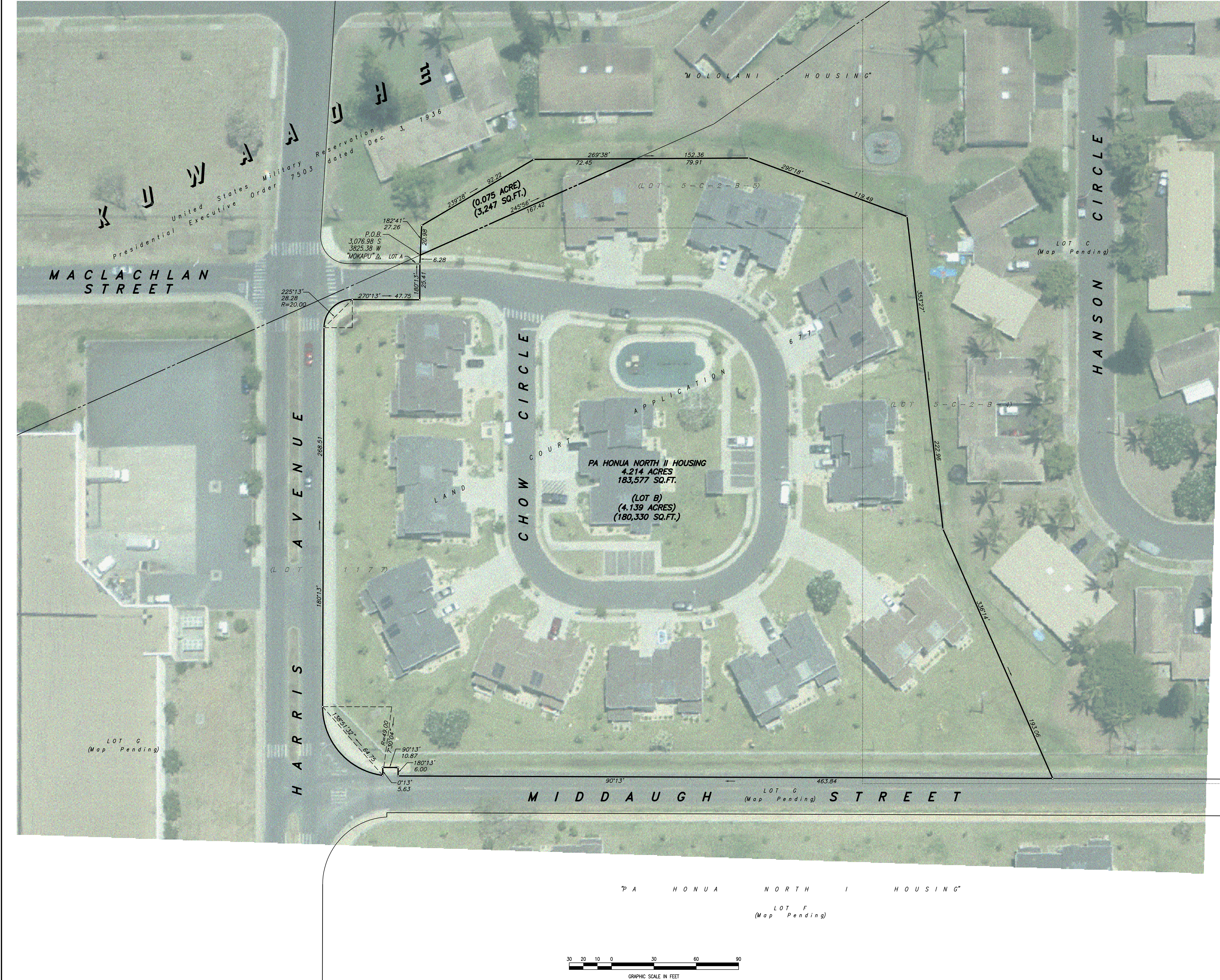
- NOTES:
1. Azimuths & Coordinates are referred to Government Survey Triangulation Station "MOKAPU".
  2. Map is compiled from records found at the State Survey Office, Real Property Tax Mapping Branch and Bureau of Conveyances.



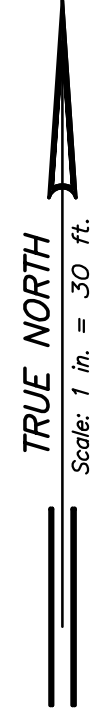
- LEGEND:
- ACP Access Control Point
  - Δ Government Survey Triangulation Station
  - P.O.B. Point of Beginning
  - Sq.Ft. Square Feet







LEGEND:	
ACP	Access Control Point
▲	Government Survey Triangulation Station
F.O.B.	Point of Beginning
Sq.Ft.	Square Feet



NOTES:

1. Azimuths & Coordinates are referred to Government Survey Triangulation Station "MOKAPU".
2. Map is compiled from records found at the State Survey Office, Real Property Tax Mapping Branch and Bureau of Conveyances.

LEGAL DESCRIPTION:

All those certain parcels of land situate at Kailua and Kaneohe, District of Koolauapoko, City and County of Honolulu, State of Hawaii, described as follows:

ITEM I:

LAND COURT APPLICATION 677 - PORTION OF LOTS 5-C-2-B-4 AND 5-C-2-B-5, AS SHOWN ON MAP 174 AND PORTION OF LOT 1177, AS SHOWN ON MAP 295, INTO LOT B, ON PENDING MAP:

ITEM II:

PORTION OF THE LANDS CONVEYED BY PRESIDENTIAL EXECUTIVE ORDER NO. 2900, DATED JULY 2, 1918, AMENDED BY PRESIDENTIAL EXECUTIVE ORDER NO. 4535, DATED OCTOBER 29, 1926, AMENDED AND CORRECTED BY PRESIDENTIAL EXECUTIVE ORDER NO. 7503, DATED DECEMBER 3, 1936, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

ITEM III:

A portion of Lot 5-C-2-B-4 and 5-C-2-B-5, as shown on Map 174, and portion of Lot 1177, as shown on Map 295, such maps being filed in the Office of the Assistant Registrar of the Land Court of the State of Hawaii with Land Court Application No. 677 of Harold K. L. Coale, and described in Transfer Certificate of Title No. 52,716 issued to the United States of America, said portion described as follows:

The parcel designated as Lot B, area 180,330 square feet, or 4.139 acres, more or less, as shown on a Pending Map for said Land Court Application No. 677, which map was submitted to the State Land Surveyor's Office on **Monday, May 20, 2007**. Said Lot B being more particularly described as follows:

Beginning at the Southeastern corner of this parcel of land, being also the Southeastern corner of Lot C, as shown on Pending Map of Land Court Application 677, being also on the Northern side of Middaugh Street, thence running by azimuths measured clockwise from true South:

1. 90° 13' 463.94 feet along the Northern side of Middaugh Street;
2. 180° 13' 6.00 feet along same;
3. 90° 13' 10.87 feet along same;
4. 0° 13' 5.63 feet along same;
- thence along the Northeastern corner of the intersection of Harris Avenue and Middaugh Street, on a curve to the right with a radius of 150.00 feet, the chord azimuth and distance being:
5. 138° 51' 32" 64.75 feet;
6. 180° 13' 268.51 feet along the Eastern side of Harris Avenue;
- thence along the Southeastern corner of the intersection of Harris Avenue and Chow Circle, on a curve to the right with a radius of 100.00 feet, the chord azimuth and distance being:
7. 225° 13' 28.28 feet;
8. 270° 13' 47.75 feet along the Southern side of Chow Circle;
9. 180° 13' 25.41 feet across Chow Circle;
10. 182° 41' 6.28 feet along Lot A, as shown on Pending Map of Land Court Application 677;
11. 245° 56' 167.42 feet along Presidential Executive Order No. 7503, dated December 3, 1936;
12. 269° 38' 79.91 feet along Lot C, as shown on Pending Map of Land Court Application 677;
13. 290° 18' 119.49 feet along same;
14. 335° 27' 222.96 feet along same;
15. 336° 14' 193.06 feet along same to the point of beginning and containing an area of 180,330 square feet, or 4.139 acres, more or less.

Being a portion of the lands conveyed by the following:

DECLARATION OF TAKING - CIVIL NO. 610 - DISTRICT COURT OF THE UNITED STATES - DISTRICT OF HAWAII

Dated: October 1, 1945  
Document No. 86277  
Vester: UNITED STATES OF AMERICA  
Transfer Certificate of Title: 52,716

ITEM IV:

All of that certain parcel of land being a portion of the lands conveyed by Presidential Executive Order No. 2900, dated July 2, 1918, amended by Presidential Executive Order No. 4535, dated October 29, 1926, amended and corrected by Presidential Executive Order No. 7503, dated December 3, 1936, being more particularly described as follows:

Beginning at the Southwestern corner of this parcel of land, being the Northern corner of Lot A on Pending Map of Land Court Application 677, being also the Northwestern corner of Lot B on Pending Map of Land Court Application 677, the coordinates of said point of beginning referred to Government Survey Triangulation Station "MOKAPU" being 3,076.98 feet South and 3,825.38 feet West, and thence running by azimuths measured clockwise from true South:

1. 182° 41' 20.98 feet along remainder of Presidential Executive Order No. 7503, dated December 3, 1936;
2. 239° 28' 92.22 feet along same;
3. 269° 38' 72.45 feet along same;
4. 65° 56' 167.42 feet along Lot B, as shown on Pending Map of Land Court Application 677 to the point of beginning and containing an area of 3,247 square feet, or 0.075 acres, more or less.

**MODIFIED ALTA/ACSM LAND TITLE SURVEY**  
**"PA HONUA NORTH II HOUSING"**  
**BEING A PORTION OF THE LANDS CONVEYED BY**  
**PRESIDENTIAL EXECUTIVE ORDER NO. 2900, DATED JULY 2, 1918,**  
**AMENDED BY PRESIDENTIAL EXECUTIVE ORDER NO. 4535,**  
**DATED OCTOBER 29, 1926, AMENDED AND CORRECTED BY**  
**PRESIDENTIAL EXECUTIVE ORDER NO. 7503, DATED DECEMBER 3, 1936**  
**AND LOT B, AS SHOWN ON PENDING MAP**  
**OF LAND COURT APPLICATION 677**

KANEOHE, KOOLAUPOKO, OAHU, HAWAII  
TAX MAP KEY: (1ST DIV.) 4-4-09: portion 03

SURVEY CERTIFICATE:

Subject Premises: PA HONUA NORTH II HOUSING  
Kailua & Kaneohe, Koolauapoko, Oahu, Hawaii

The undersigned, as to the property described and depicted in the attached survey entitled "Modified ALTA/ACSM Land Title Survey, PA HONUA NORTH II HOUSING, Being a Portion of the lands conveyed by Presidential Executive Order No. 2900, dated July 2, 1918, amended by Presidential Executive Order No. 4535, dated October 29, 1926, amended and corrected by Presidential Executive Order No. 7503, dated December 3, 1936 and Lot B, as shown on Pending Map of Land Court Application 677", hereby certifies to Oahu Military Communities, LLC, Hawaii Military Communities, LLC, Merrill Lynch, Pierce, Fenner & Smith Incorporated and its affiliates, Commonwealth Land Title Insurance Company, Island Title Corporation, United States of America, Department of the Navy, M&A Insurance Corporation, OIG Insurance North America, Inc., Latham Brothers, Inc., Ballou, Spahr, Anderson & Rogers, LLP, Norton & Williams, LLP, Oahu Real Estate, Yoshimoto LLP, Hawkins, Delaheld & Wood LLP, Holland & Knight LLP, Kutak Rock LLP, Cotnam Ball LLP, The Bank of New York Trust Company, N.A. and Trillem Real Estate Advisors, Inc., and their respective successors and assigns, as of the date of this Survey Certificate, that:

- (1) I am a registered surveyor No. 2927 licensed by the State of Hawaii;
- (2) The attached survey entitled "Modified ALTA/ACSM Land Title Survey, PA HONUA NORTH II HOUSING, Being a Portion of the lands conveyed by Presidential Executive Order No. 2900, dated July 2, 1918, amended by Presidential Executive Order No. 4535, dated October 29, 1926, amended and corrected by Presidential Executive Order No. 7503, dated December 3, 1936 and Lot B, as shown on Pending Map of Land Court Application 677" was prepared by me, or directly under my supervision, after inspection of the premises on the ground various times from June 2007 through June 2007, and accurately and correctly represents the facts and conditions found at the time of survey. The attached survey consists of a total of 2 sheets. The first sheet of the survey is accompanied by an aerial photograph of each parcel of the subject property;
- (3) The survey accurately and correctly shows:

- (a) The boundary lines of the subject property and the area of the subject property, and each parcel thereof, as measured in both acres and square feet (and that the lines of actual possession are the same, except as expressly noted);
- (b) The location of all easements, rights-of-way and other matters evidenced by the title commitment (the "Title Commitment") with respect to the subject property (or any part thereof) in accordance with the applicable provisions of Section 5(h) of the "Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys," jointly established and adopted in 2005 by American Land Title Association ("ALTA") and National Society of Professional Surveyors ("NSPS") (the "ALTA Standards") and the location of all easements, rights-of-way and other matters with respect to the subject property (or any part thereof) of which I have knowledge or have been advised (whether or not of record), and, if applicable, identified by reference to the specific recording information or, if outside, Navy control number and, if applicable, cross-referenced to the exception number in the Title Commitment (and including whether the same apply to and can be located and maintained road or other possible accessways);
- (c) As shown on the Aerial Page only, all publicly-dedicated and maintained abutting streets and roadways providing access to the subject property specifically showing the access points thereon and the name thereof, together with map insets showing access over Navy-owned roads or other possible accessways to the first point of contact with a publicly dedicated and maintained road or other possible accessways;
- (d) The scale, north direction, beginning point, and point of reference from which each parcel of the subject property is located;
- (e) A vicinity map showing the subject property in reference to major street intersections;
- (f) The measured and computed courses and distances of the exterior property lines of each parcel of the subject property (also showing the point of beginning thereof), which form a mathematically closed figure and coincide with the separate metes and bounds or other legally sufficient legal descriptions of the boundaries of each respective parcel of the subject property provided to the parties listed above;
- (g) The location of all monuments, stakes or marks on the subject property or upon which the establishment of the corners of the subject property depend, whether found or placed; and
- (h) The location and boundaries (with measured and computed courses and distances) of those areas of the subject property, if any, that are subject to partial legislative jurisdiction, concurrent legislative jurisdiction or proprietary jurisdiction;
- (4) Except as shown and noted on the survey, there are no (a) encroachments upon the subject property by any buildings, fences or other structures upon adjacent property, streets or other structures, encroachments on adjacent property, streets or other structures, fences or other structures on the subject property, (c) party walls, (d) conflicts or protrusions, or (e) visible discrepancies, shortages in area or boundary line conflicts;
- (5) Adequate ingress to and egress from the subject property is provided by way of H-3 Freeway to G Street to Makapu Road to Harris Avenue to MacLachlan Street, each of the same being paved and routinely maintained by the State of Hawaii & the United States of America;
- (6) There are no building setback lines disclosed by the Title Commitment or other documents or instruments provided to the undersigned as affecting the subject property and, as such, no building setback lines have been shown;
- (7) The subject property does (and all of the buildings and other structures located on the subject property do) lie within Flood Zone D (areas in which flood hazards are undetermined, but possible) by the Department of Homeland Security, on Flood Insurance Rate Map No. 1500302080F, dated September 30, 2004, City and County of Honolulu, State of Hawaii, which is the current Flood Insurance Rate Map published by the Federal Emergency Management Agency for the community in which said premises is situated;
- (8) This survey is made at least in accordance with the ALTA Standards, except:

- (a) for the provisions of Paragraph 5(c) (only with respect to names and widths and location of pavement for streets and highways abutting the subject property and evidence of private roads, but without limiting the provisions of Section 3(c) of this Survey Certificate), Section 3(d) (only as it relates to contiguous, areas and overlaps interior to exterior boundaries), Section 5(f), 5(g) (but without limiting the provisions of Section 3(c) of this Survey Certificate), 5(i) and 5(j) (only as it relates to driveways and alleys on or crossing the subject property, but without limiting the provisions of Section 3(c) of this Survey Certificate); and
- (b) that (check applicable provision(s); if nothing checked, then not applicable):

- ☒ (1) The subject property is, as of the date of this Certificate, comprised in whole or in part of existing recorded Land Court lot(s) that are the subject of petition(s) and map(s) for consolidation and/or resubdivision filed with Land Court and which, as of the date of this Certificate, are pending final Land Court approval. The boundary lines of the subject property shown on the survey depict the proposed final boundary lines of the subject property upon final Land Court approval as reflected on the pending Land Court petition(s) and map(s). The survey does not depict the boundary lines of the existing recorded Land Court lot(s) of which the subject property is currently a part. Upon final Land Court approval of the pending petition(s) for the consolidation and/or resubdivision necessary to create the subject property (as reflected by the boundary lines depicted in the pending Land Court petition(s) and map(s)), the undersigned shall execute and deliver an updated certificate in the same form and substance as this Certificate without the provisions of this Section 8(b) as of the date of such updated certificate, and/or
- ☒ (2) The survey of the subject property is an original survey of lot(s) comprised in whole or in part of Regular System land lot(s). A surveyor's affidavit certifying the metes and bounds description of the Regular System land lot(s) of which the subject property is a part has not been recorded in the Bureau of Conveyances of the State of Hawaii. The survey, therefore, only reflects, and the undersigned only certifies, the metes and bounds description of the subject property as depicted on the survey.

- (9) The Aerial Page of the survey shows all internal streets and roadways, buildings and improvements thereon (identified on the survey by available information with respect to such photograph, including, if available, the date thereof) with the boundary lines and easements within and upon the subject property superimposed thereon. The undersigned does not certify as to the accuracy of the aerial photograph contained on the Aerial Page;
- (10) Pursuant to the accuracy standards as adopted by ALTA and NSPS, and in effect on the date of this Survey Certificate, the undersigned certifies that in my professional opinion, as a land surveyor registered in the State of Hawaii, the Relative Positional Accuracy of this survey does not exceed that which is specified therein; and
- (11) This survey conforms to the current minimum local and state standards and standards of care for surveys of the State of Hawaii.

The parties listed above are entitled to rely on the survey and this certificate as being true, complete and accurate in all respects.  
Dated this 13th day of July, A.D., 2007

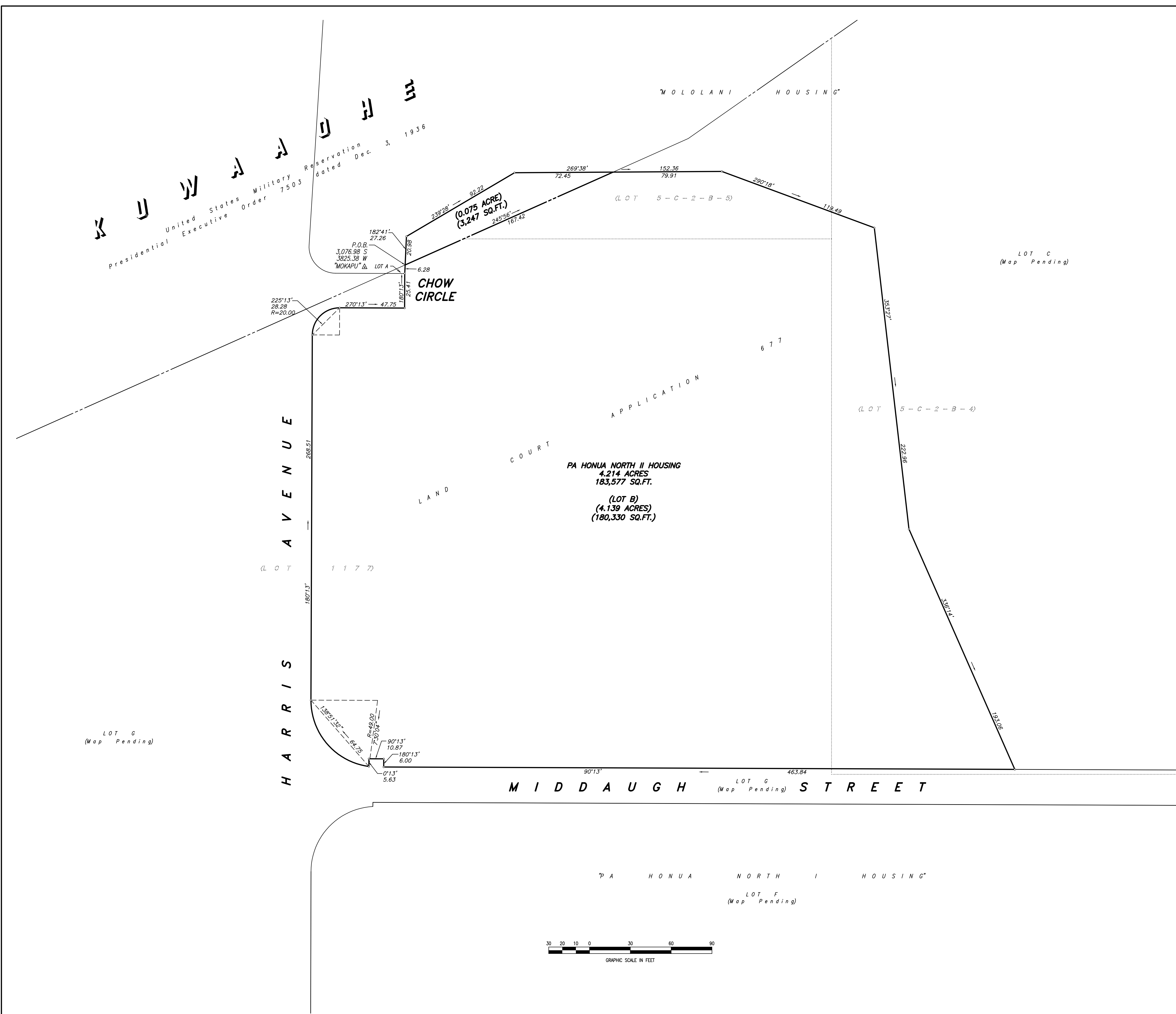
**M&E Pacific, Inc.**  
METCALF & EDDY AECOM  
841 Bishop St., Suite 1900, Honolulu, HI 96813  
Phone: (808) 521-3051 Fax: (808) 524-0246

By: Name: George S. Yoshimura  
Licensed Professional Land Surveyor  
Registration No. 2927, State of Hawaii

Dated: July 13, 2007





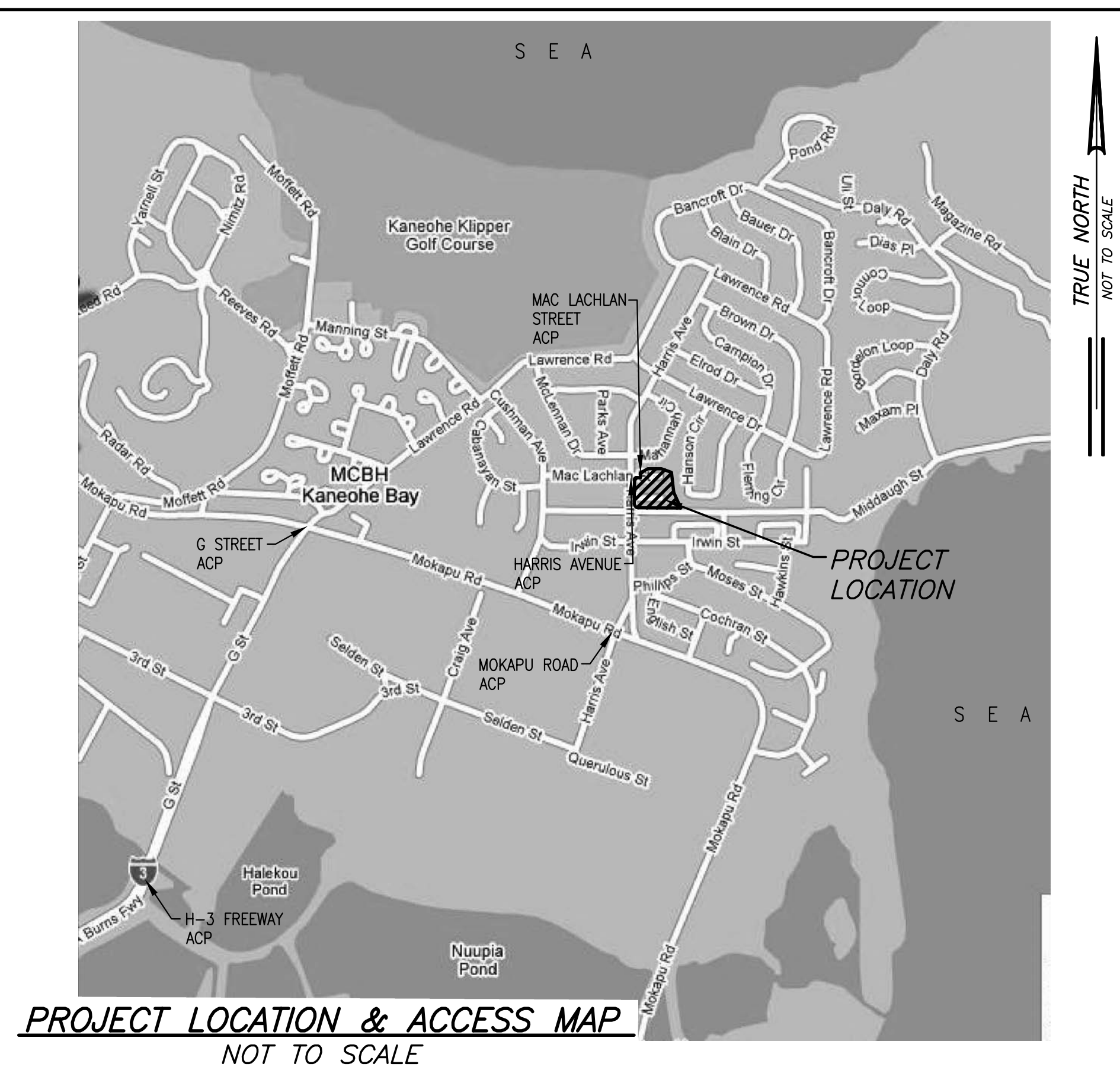
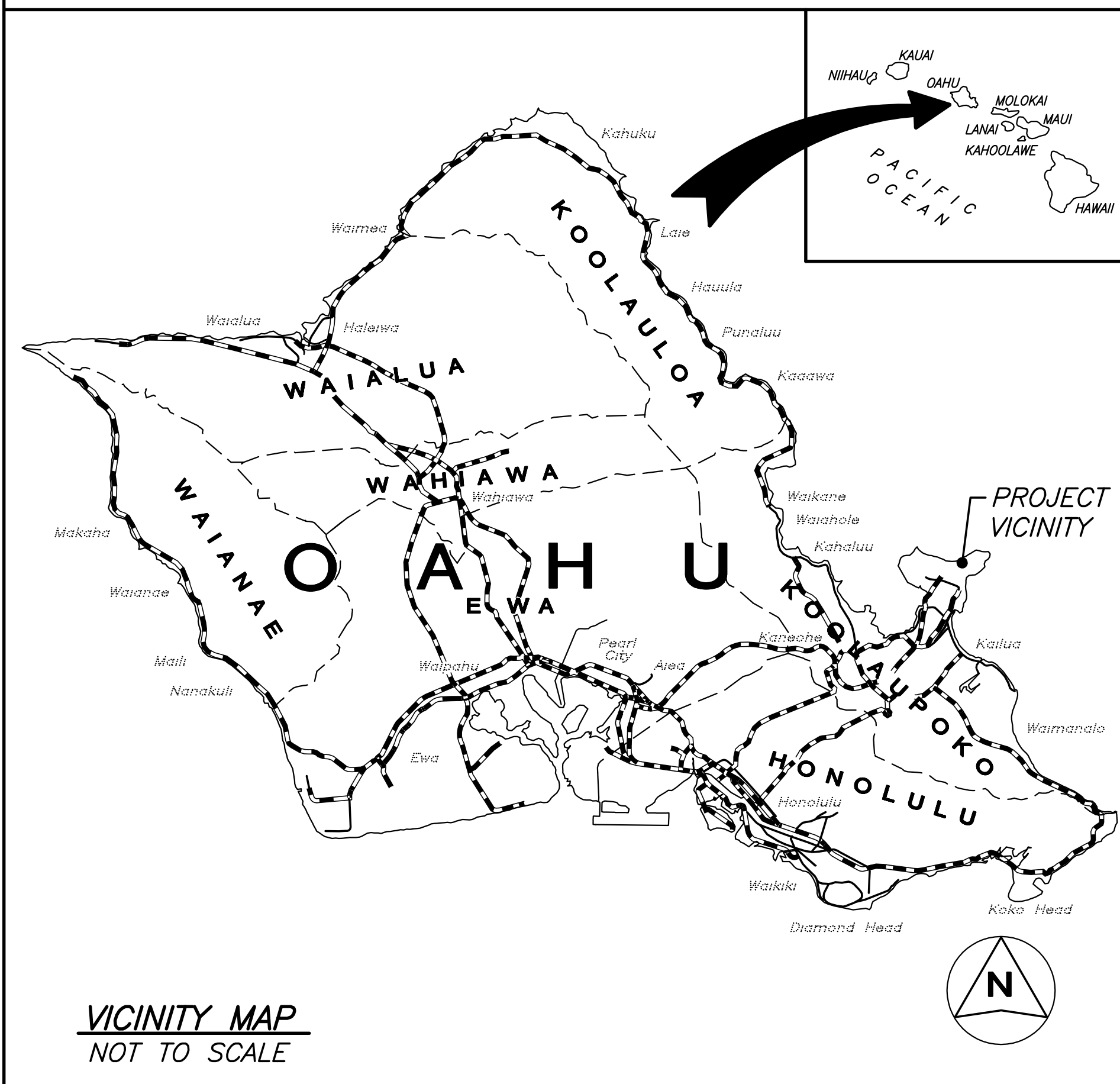


**MODIFIED ALTA/ACSM LAND TITLE SURVEY**

**"PA HONUA NORTH II HOUSING"**  
BEING A PORTION OF THE LANDS CONVEYED BY  
PRESIDENTIAL EXECUTIVE ORDER NO. 2900, DATED JULY 2, 1918,  
AMENDED BY PRESIDENTIAL EXECUTIVE ORDER NO. 4535,  
DATED OCTOBER 29, 1926, AMENDED AND CORRECTED BY  
PRESIDENTIAL EXECUTIVE ORDER NO. 7503, DATED DECEMBER 3, 1936  
AND LOT B, AS SHOWN ON PENDING MAP  
OF LAND COURT APPLICATION 677

KANE OHE, KOOLAUPOKO, OAHU, HAWAII  
TAX MAP KEY: (1ST DIV.) 4-4-09: portion 03

- NOTES:
1. Azimuths & Coordinates are referred to Government Survey Triangulation Station "MOKAPU".
  2. Map is compiled from records found at the State Survey Office, Real Property Tax Mapping Branch and Bureau of Conveyances.



LEGEND:	
ACP	Access Control Point
▲	Government Survey Triangulation Station
P.O.B.	Point of Beginning
Sq.Ft.	Square Feet







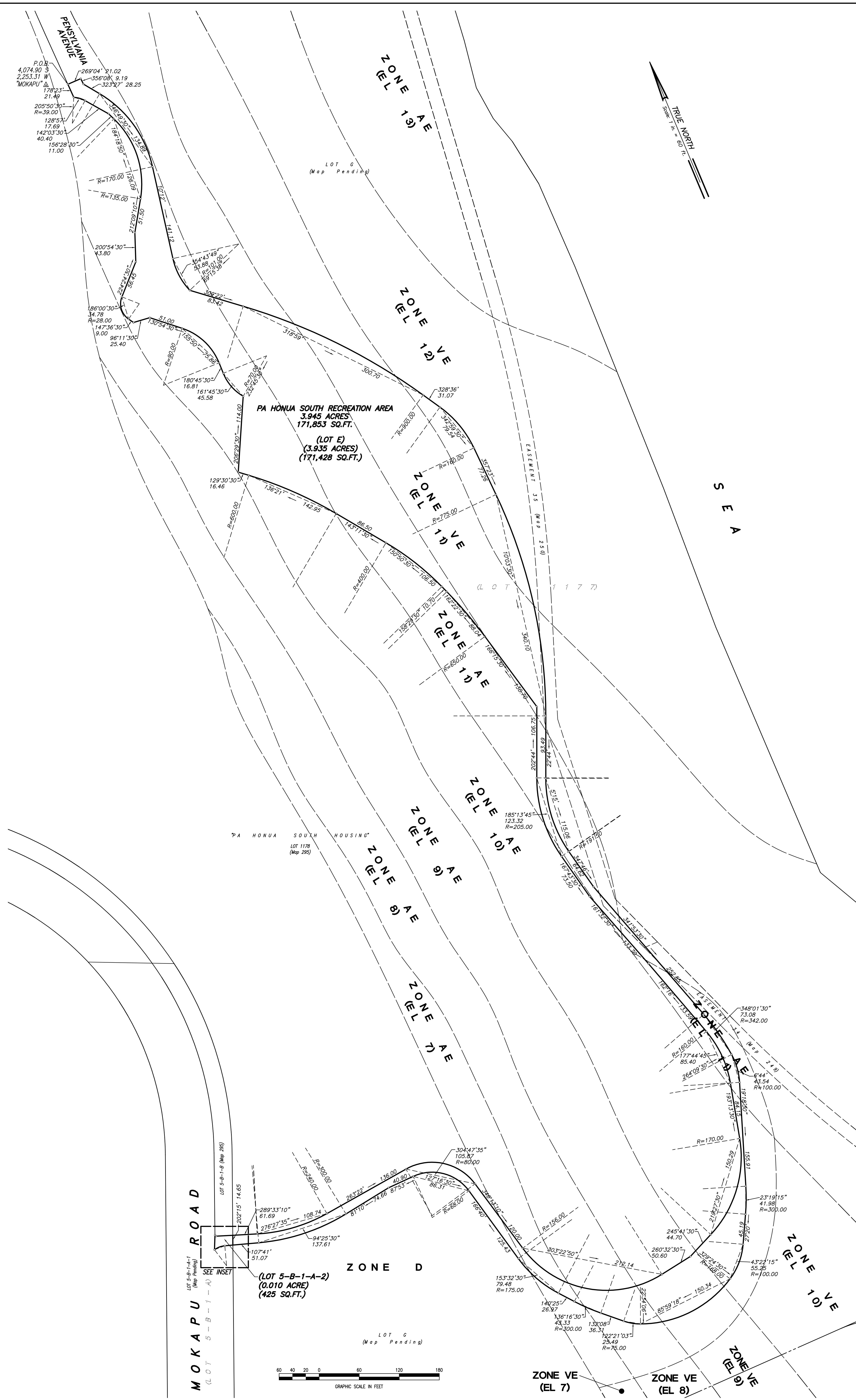
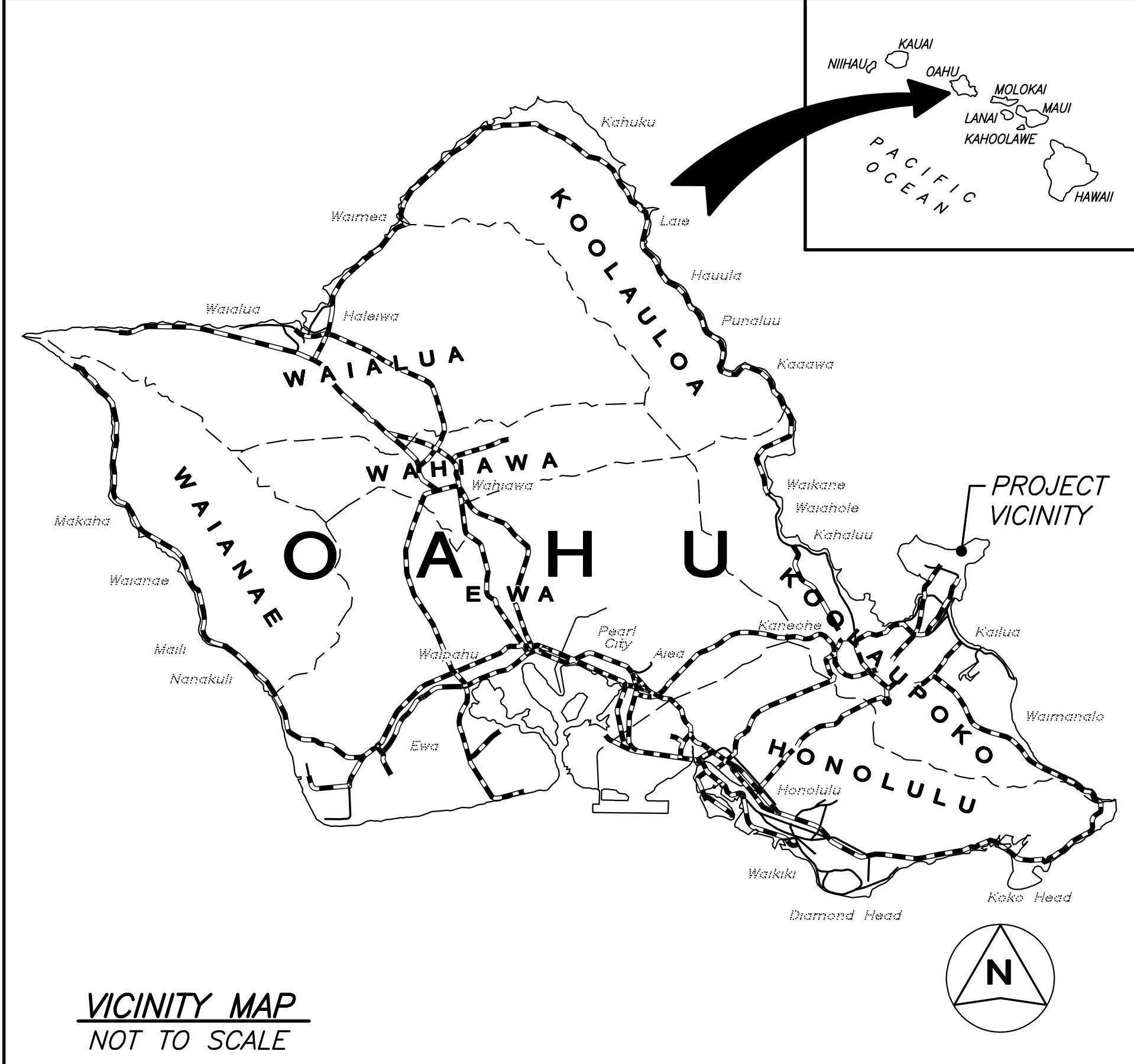
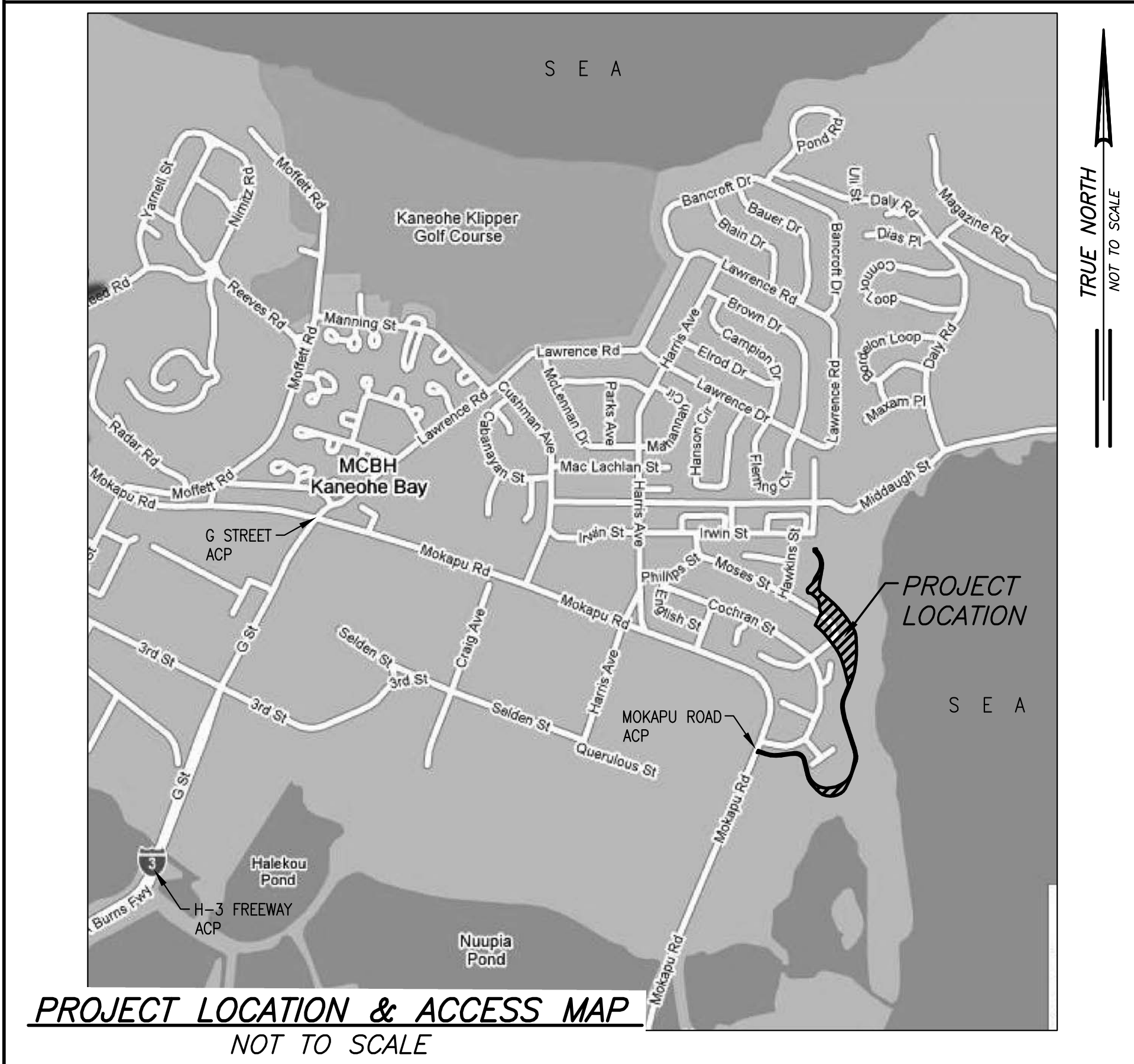
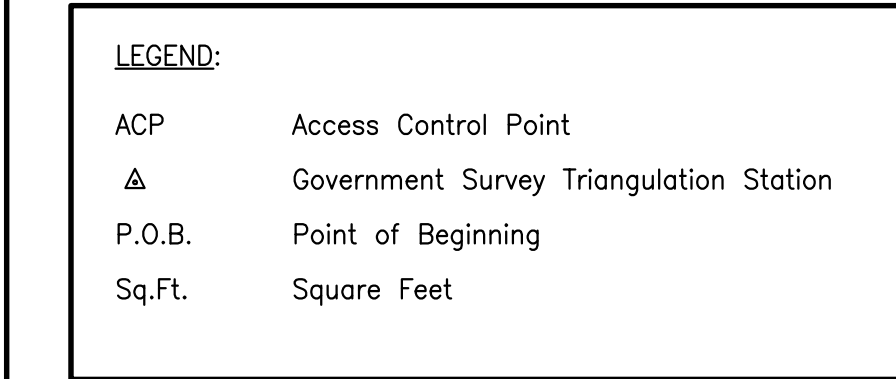
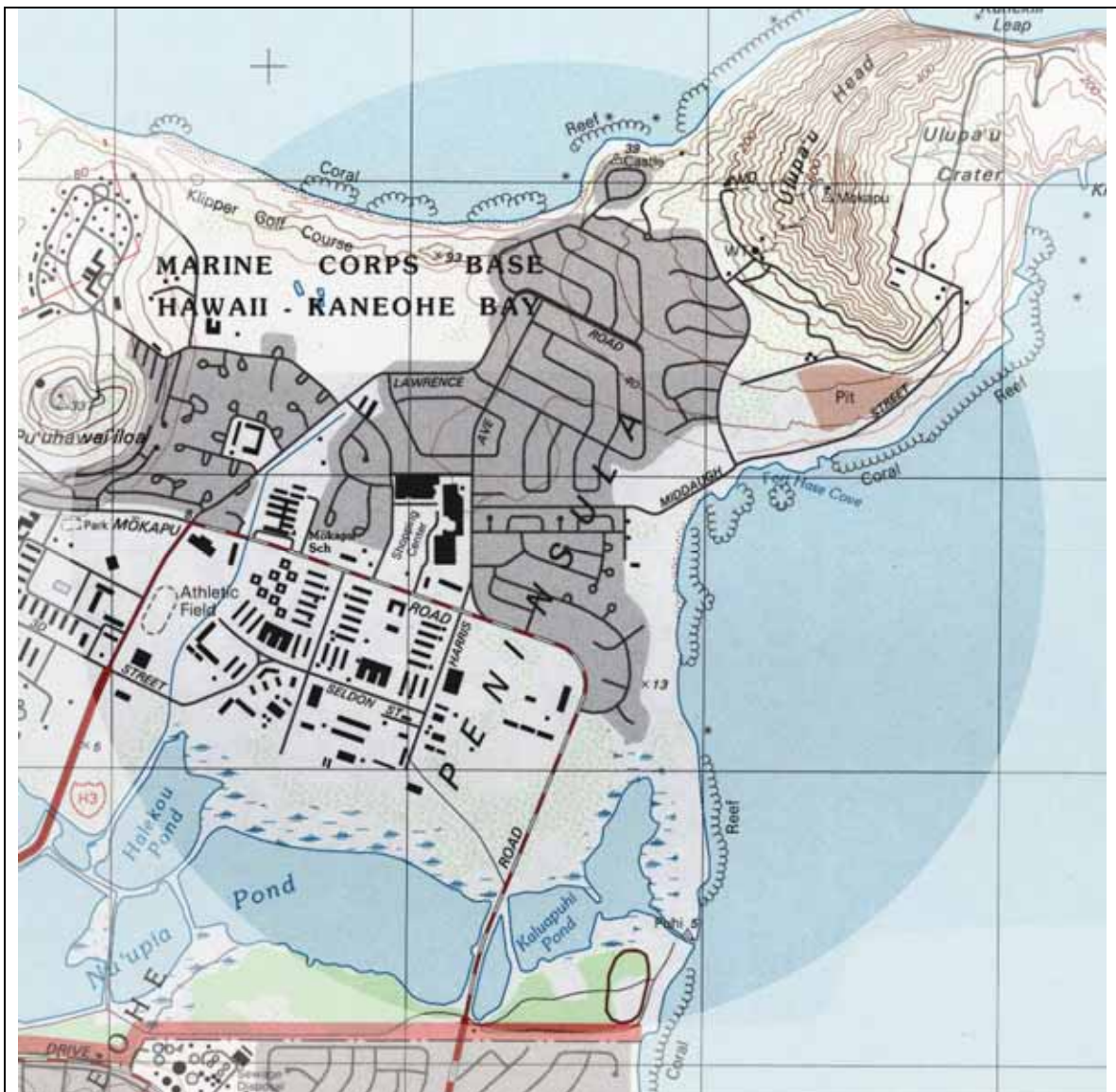


EXHIBIT 3  
SITE TOPOGRAPHICAL MAP



Source: USGS Mokapu, Hawaii Quadrangle, 7.5 Minute Series, 1998 (modified)



NORTH

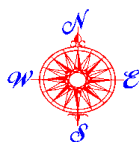


1 inch = 1667 feet  
SCALE

1998 Historical Topographic Map  
Pa Honua Family Housing Area

EXHIBIT 4  
ENVIRONMENTAL DATABASE SITES WITHIN ASTM SEARCH  
DISTANCE





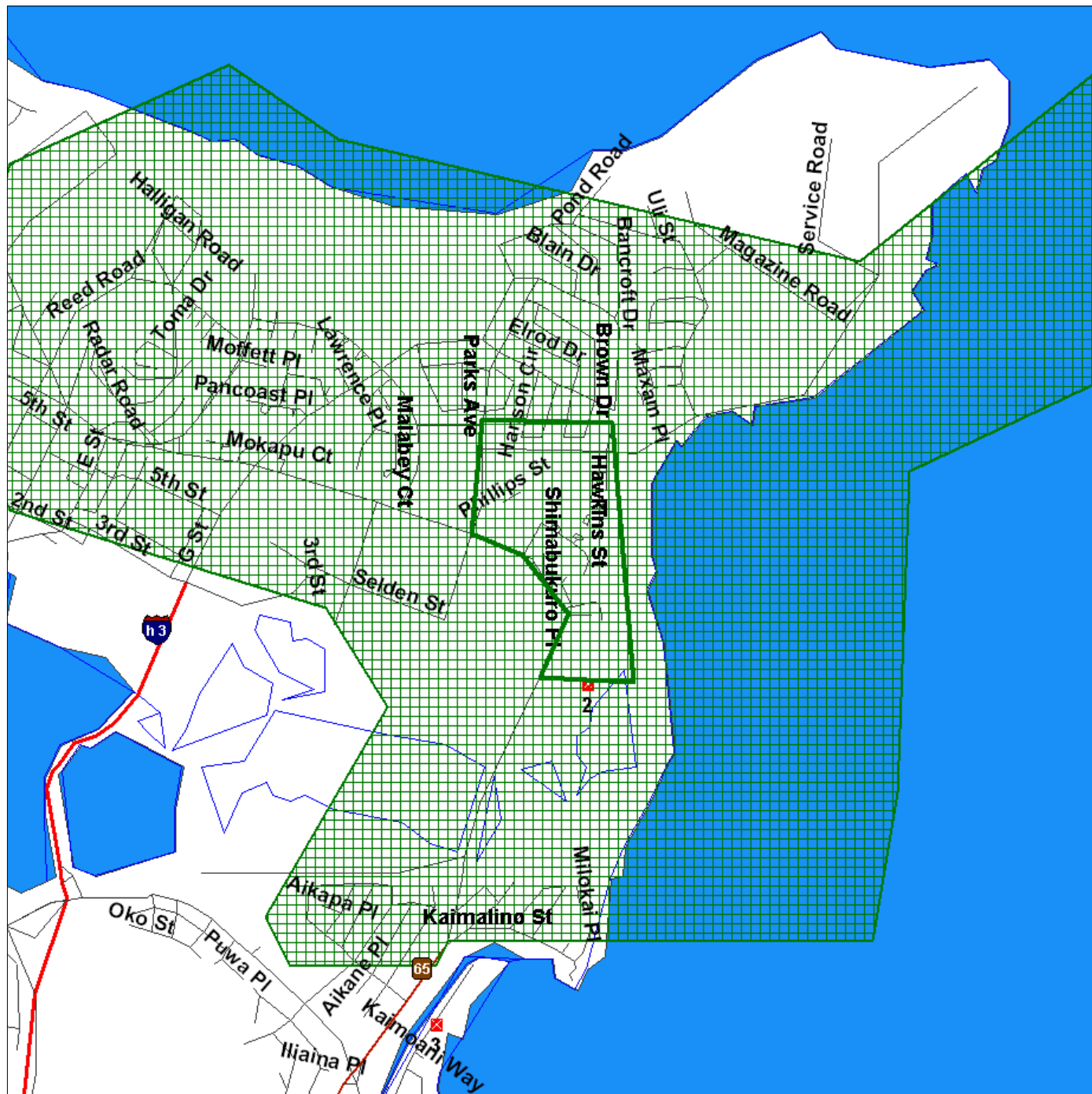
# Environmental FirstSearch

1 Mile Radius from Area

Single Map:



PA HONUA , KAILUA HI 96734

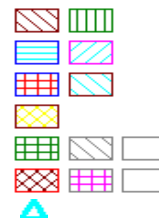


Source: U.S. Census TIGER Files

Area Polygon .....  
Identified Site, Multiple Sites, Receptor .....  
NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste  
Triballand.....  
National Historic Sites and Landmark Sites .....  
Railroads .....



Area of Critical Environmental Concern (ACEC), Protected Open Spaces  
Estimated Habitats of Rare Wetlands Wildlife, Vernal Pool .....  
Floodplains: 100 Year, 500 Year .....  
Wetlands .....  
Fed. Land Use: Wilderness Areas, Wildlife Preserves .....  
Fed. Land Use: Amer. Indian Sacred Sites, Endangered Species' Habitats..  
Federal Wells .....



## Appendix A

### ENVIRONMENTAL DATABASE REPORT



**TRACK ► INFO SERVICES, LLC**

# **Environmental FirstSearch™ Report**

Target Property: pa honua

**PA HONUA**

**KAILUA HI 96734**

Job Number: 052207

**PREPARED FOR:**

Parsons

100 West Walnut Street

Pasadena, CA 91124

05-24-07



*Tel: (866) 664-9981*

*Fax: (818) 249-4227*



# Environmental FirstSearch Search Summary Report

**Target Site:** PA HONUA  
KAILUA HI 96734

## FirstSearch Summary

Database	Sel	Updated	Radius	Site	1/8	1/4	1/2	1/2>	ZIP	TOTALS
NPL	Y	03-08-07	1.00	0	0	0	0	0	0	0
NPL Delisted	Y	03-08-07	0.50	0	0	0	0	-	0	0
CERCLIS	Y	03-08-07	0.50	0	0	0	0	-	0	0
NFRAP	Y	03-08-07	0.50	0	0	0	0	-	0	0
RCRA COR ACT	Y	06-06-06	1.00	0	0	0	0	0	0	0
RCRA TSD	Y	06-06-06	0.50	0	0	0	0	-	0	0
RCRA GEN	Y	06-06-06	0.25	0	0	0	-	-	0	0
RCRA NLR	Y	06-06-06	0.12	0	0	-	-	-	0	0
Federal IC / EC	Y	05-02-07	0.25	0	0	0	-	-	0	0
ERNS	Y	12-31-06	0.12	0	0	-	-	-	0	0
Tribal Lands	Y	12-01-05	1.00	0	0	0	0	0	0	0
State/Tribal Sites	Y	07-24-06	1.00	0	0	0	0	1	0	1
State/Tribal SWL	Y	NA	0.50	0	0	0	0	-	0	0
State/Tribal LUST	Y	07-28-06	0.50	0	0	0	0	-	0	0
State/Tribal UST/AST	Y	08-04-06	0.25	0	0	0	-	-	0	0
State/Tribal EC	Y	NA	0.25	0	0	0	-	-	0	0
State/Tribal IC	Y	07-24-06	0.25	0	0	0	-	-	0	0
State/Tribal VCP	Y	07-24-06	0.50	0	0	0	0	-	0	0
State/Tribal Brownfields	Y	07-24-06	0.50	0	0	0	0	-	0	0
State ACEC	Y	NA	0.50	0	0	0	0	-	0	0
Wetlands	Y	NA	0.50	0	0	0	0	-	0	0
Floodplains	Y	NA	0.50	0	0	0	0	-	0	0
Historic Landmarks	Y	11-17-05	0.50	0	0	0	0	-	0	0
Federal Land Use	Y	08-01-06	0.50	1	0	0	0	-	0	1
Federal Wells	Y	12-28-06	0.50	0	0	0	0	-	0	0
FAA/FTC Towers	Y	01-12-07	0.25	0	1	0	-	-	0	1
NPDES	Y	12-15-06	0.25	0	0	0	-	-	0	0
FINDS	Y	11-01-06	0.25	0	0	0	-	-	0	0
TRIS	Y	11-10-06	0.25	0	0	0	-	-	0	0

### Notice of Disclaimer

Due to the limitations, constraints, inaccuracies and incompleteness of government information and computer mapping data currently available to TRACK Info Services, certain conventions have been utilized in preparing the locations of all federal, state and local agency sites residing in TRACK Info Services's databases. All EPA NPL and state landfill sites are depicted by a rectangle approximating their location and size. The boundaries of the rectangles represent the eastern and western most longitudes; the northern and southern most latitudes. As such, the mapped areas may exceed the actual areas and do not represent the actual boundaries of these properties. All other sites are depicted by a point representing their approximate address location and make no attempt to represent the actual areas of the associated property. Actual boundaries and locations of individual properties can be found in the files residing at the agency responsible for such information.

### Waiver of Liability

Although TRACK Info Services uses its best efforts to research the actual location of each site, TRACK Info Services does not and can not warrant the accuracy of these sites with regard to exact location and size. All authorized users of TRACK Info Services's services proceeding are signifying an understanding of TRACK Info Services's searching and mapping conventions, and agree to waive any and all liability claims associated with search and map results showing incomplete and or inaccurate site locations.

- Continued on next page -

# ***Environmental FirstSearch Search Summary Report***

**Target Site:** PA HONUA  
KAILUA HI 96734

## **FirstSearch Summary**

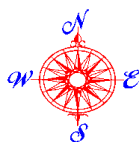
<b>Database</b>	<b>Sel</b>	<b>Updated</b>	<b>Radius</b>	<b>Site</b>	<b>1/8</b>	<b>1/4</b>	<b>1/2</b>	<b>1/2&gt;</b>	<b>ZIP</b>	<b>TOTALS</b>
HMIRS	Y	04-16-07	0.25	0	0	0	-	-	0	0
NCDB	Y	09-22-06	0.25	0	0	0	-	-	0	0
PADS	Y	10-17-06	0.25	0	0	0	-	-	0	0
Releases	Y	12-31-06	0.25	0	0	0	-	-	0	0
Federal Other	Y	03-25-07	0.25	0	0	0	-	-	0	0
- TOTALS -				1	1	0	0	1	0	3

## **Notice of Disclaimer**

Due to the limitations, constraints, inaccuracies and incompleteness of government information and computer mapping data currently available to TRACK Info Services, certain conventions have been utilized in preparing the locations of all federal, state and local agency sites residing in TRACK Info Services's databases. All EPA NPL and state landfill sites are depicted by a rectangle approximating their location and size. The boundaries of the rectangles represent the eastern and western most longitudes; the northern and southern most latitudes. As such, the mapped areas may exceed the actual areas and do not represent the actual boundaries of these properties. All other sites are depicted by a point representing their approximate address location and make no attempt to represent the actual areas of the associated property. Actual boundaries and locations of individual properties can be found in the files residing at the agency responsible for such information.

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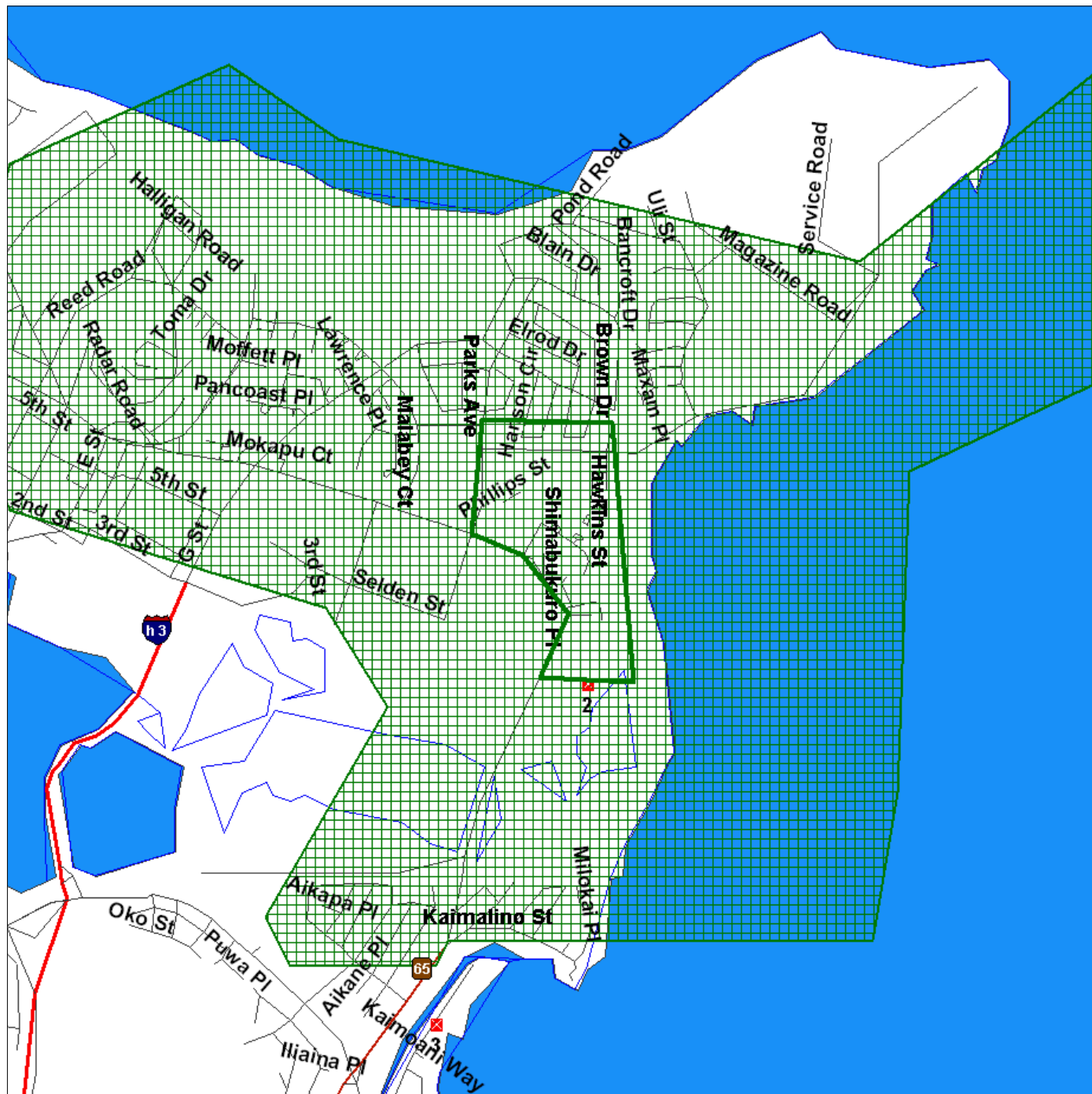
# Environmental FirstSearch

1 Mile Radius from Area

Single Map:



PA HONUA , KAILUA HI 96734

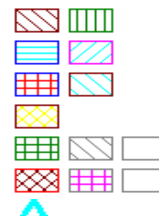


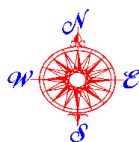
Source: U.S. Census TIGER Files

Area Polygon .....  
Identified Site, Multiple Sites, Receptor .....  
NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste  
Triballand.....  
National Historic Sites and Landmark Sites .....  
Railroads .....



Area of Critical Environmental Concern (ACEC), Protected Open Spaces  
Estimated Habitats of Rare Wetlands Wildlife, Vernal Pool .....  
Floodplains: 100 Year, 500 Year .....  
Wetlands .....  
Fed. Land Use: Wilderness Areas, Wildlife Preserves .....  
Fed. Land Use: Amer. Indian Sacred Sites, Endangered Species' Habitats..  
Federal Wells .....



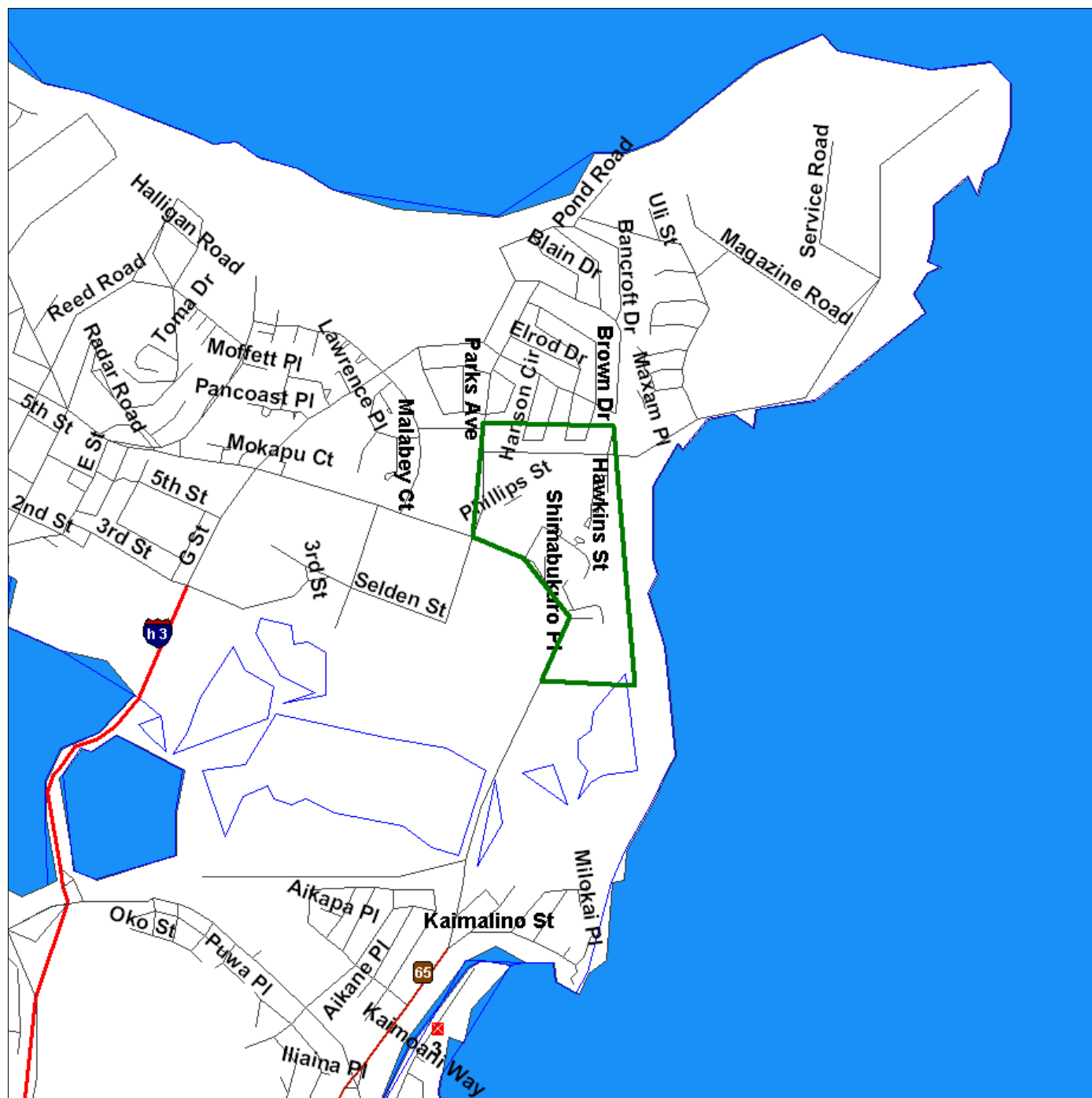


# Environmental FirstSearch

1 Mile Radius from Area  
ASTM-05: NPL, RCRA COR, STATE



PA HONUA , KAILUA HI 96734

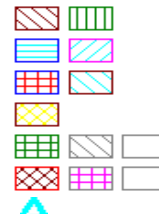


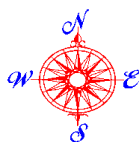
Source: U.S. Census TIGER Files

Area Polygon .....  
Identified Site, Multiple Sites, Receptor .....  
NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste  
Triballand.....  
National Historic Sites and Landmark Sites .....  
Railroads .....



Area of Critical Environmental Concern (ACEC), Protected Open Spaces  
Estimated Habitats of Rare Wetlands Wildlife, Vernal Pool .....  
Floodplains: 100 Year, 500 Year .....  
Wetlands .....  
Fed. Land Use: Wilderness Areas, Wildlife Preserves .....  
Fed. Land Use: Amer. Indian Sacred Sites, Endangered Species' Habitats..  
Federal Wells .....



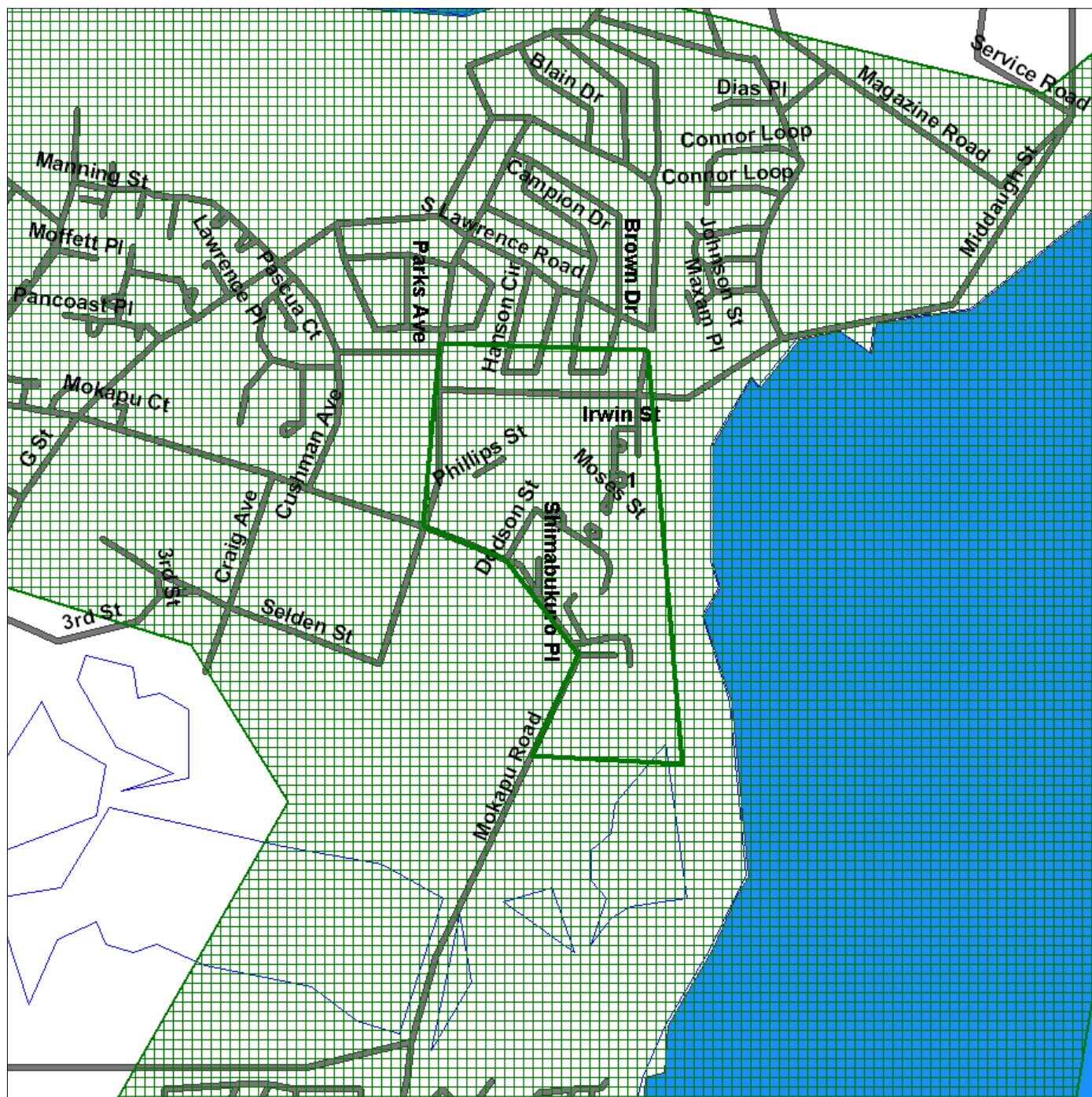


# Environmental FirstSearch

.5 Mile Radius from Area  
ASTM-05: Multiple Databases



PA HONUA , KAILUA HI 96734

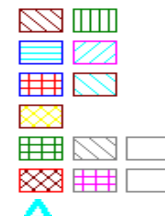


Source: U.S. Census TIGER Files

Area Polygon .....  
Identified Site, Multiple Sites, Receptor .....  
NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste  
Triballand.....  
National Historic Sites and Landmark Sites .....  
Railroads .....



Area of Critical Environmental Concern (ACEC), Protected Open Spaces  
Estimated Habitats of Rare Wetlands Wildlife, Vernal Pool .....  
Floodplains: 100 Year, 500 Year .....  
Wetlands .....  
Fed. Land Use: Wilderness Areas, Wildlife Preserves .....  
Fed. Land Use: Amer. Indian Sacred Sites, Endangered Species' Habitats..  
Federal Wells .....



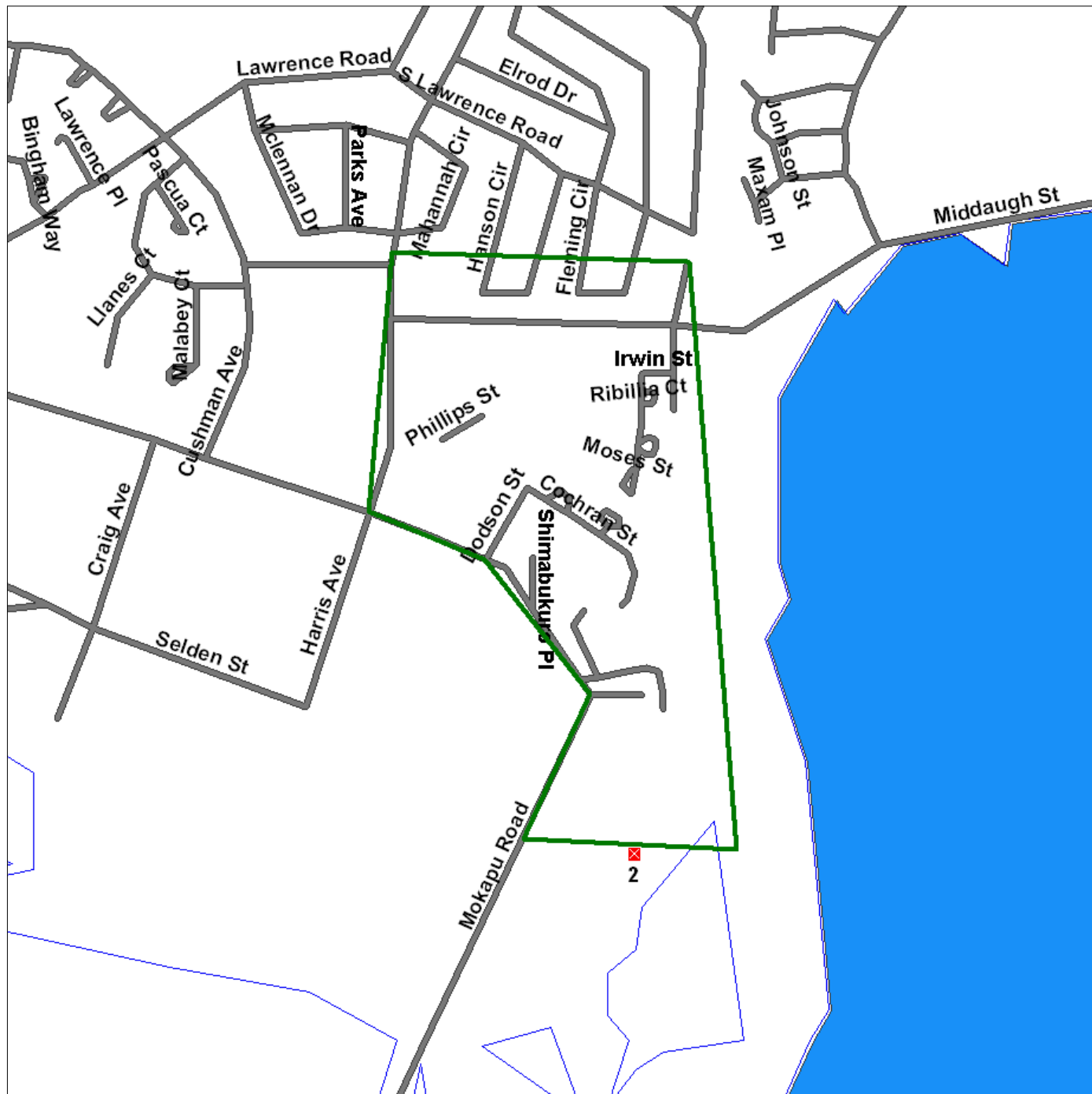


# Environmental FirstSearch

.25 Mile Radius from Area  
ASTM-05: Multiple Databases



PA HONUA , KAILUA HI 96734

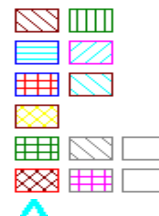


Source: U.S. Census TIGER Files

Area Polygon .....  
Identified Site, Multiple Sites, Receptor .....  
NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste  
Triballand.....  
National Historic Sites and Landmark Sites .....  
Railroads .....



Area of Critical Environmental Concern (ACEC), Protected Open Spaces  
Estimated Habitats of Rare Wetlands Wildlife, Vernal Pool .....  
Floodplains: 100 Year, 500 Year .....  
Wetlands .....  
Fed. Land Use: Wilderness Areas, Wildlife Preserves .....  
Fed. Land Use: Amer. Indian Sacred Sites, Endangered Species' Habitats..  
Federal Wells .....





# Environmental FirstSearch

.12 Mile Radius from Area  
ASTM-05: ERNS, RCRANLR



PA HONUA , KAILUA HI 96734

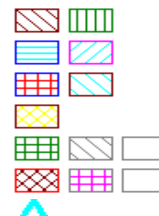


Source: U.S. Census TIGER Files

Area Polygon .....  
Identified Site, Multiple Sites, Receptor .....  
NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste  
Triballand.....  
National Historic Sites and Landmark Sites .....  
Railroads .....



Area of Critical Environmental Concern (ACEC), Protected Open Spaces  
Estimated Habitats of Rare Wetlands Wildlife, Vernal Pool .....  
Floodplains: 100 Year, 500 Year .....  
Wetlands .....  
Fed. Land Use: Wilderness Areas, Wildlife Preserves .....  
Fed. Land Use: Amer. Indian Sacred Sites, Endangered Species' Habitats..  
Federal Wells .....





***Environmental FirstSearch  
Site Information Report***

**Request Date:** 05-24-07  
**Requestor Name:** (b) (6)  
**Standard:** ASTM-05

**Search Type:** AREA  
0.19 sq mile(s)  
**Job Number:** 052207  
**Filtered Report**

**Target Site:** PA HONUA  
KAILUA HI 96734

***Demographics***

<b>Sites:</b> 3	<b>Non-Geocoded:</b> 0	<b>Population:</b> NA
<b>Radon:</b> -1.9 - 1.6 PCI/L		

***Site Location***

	<u><b>Degrees (Decimal)</b></u>	<u><b>Degrees (Min/Sec)</b></u>		<u><b>UTMs</b></u>
<b>Longitude:</b>	-157.743111	-157:44:35	<b>Easting:</b>	630246.643
<b>Latitude:</b>	21.44389	21:26:38	<b>Northing:</b>	2371658.272
			<b>Zone:</b>	4

***Comment***

<b>Comment:</b> RE-RUN ADDITIONAL DATABASES
---

***Additional Requests/Services***

**Adjacent ZIP Codes:** 0 Mile(s)

**Services:**

ZIP Code	City Name	ST	Dist/Dir	Sel

	Requested?	Date
Sanborns	No	
Aerial Photographs	No	
Historical Topos	No	
City Directories	No	
Title Search/Env Liens	No	
Municipal Reports	No	
Online Topos	No	



***Environmental FirstSearch  
Sites Summary Report***

**Target Property:** PA HONUA  
KAILUA HI 96734

**JOB:** 052207  
RE-RUN ADDITIONAL DATABASES

**TOTAL:** 3      **GEOCODED:** 3      **NON GEOCODED:** 0      **SELECTED:** 3

Page No.	ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
1	2	LANDUSE	MARINE CORPS DOD KANEOHE MARINE CO 45965	HI	0.00 --	1
1	3	TOWERS	SPRINT PCS 00-AWP-3245-OE/ASR-DE	KANEOHE HI	0.01 SW	2
2	1	STATE	KANEOHE RANCH HIST_421	55 KAILUANA PL Kailua HI 96734	0.94 SW	3

**JOB:** 052207  
RE-RUN ADDITIONAL DATABASES

TOWERS			
<b>SEARCH ID:</b>	3	<b>DIST/DIR:</b>	0.01 SW
		<b>MAP ID:</b>	2
<b>NAME:</b>	SPRINT PCS	<b>REV:</b>	01/12/07
<b>ADDRESS:</b>	KANEOHE HI	<b>ID1:</b>	00-AWP-3245-OE
		<b>ID2:</b>	
		<b>STATUS:</b>	ASR-DE
<b>CONTACT:</b>		<b>PHONE:</b>	
<p><b>ANTENNA STRUCTURE REGISTRATION - FAA DETERMINATION RECORDS</b></p> <p>The Antenna Structure Registration database contains antenna structures that generally are more than 60.96 meters(200 feet) in height or are located near an airport. This record does not appear in the ASR registration records but does appear in the FAA Determination Records for the ASR database. Records in the FAA Determination Database may not have been built.</p>			
<b>FAA DATE ISSUED:</b>	11/14/2000		
<b>FAA DATE KEYED:</b>			
<b>FAA DATE EXPIRATION:</b>	05/14/2002		
<b>DATE ACTION:</b>	11/22/2000		
<b>FAA FINAL DATE:</b>			
<b>GROUND ELEVATION:</b>	2.1		
<b>OVERALL HEIGHT OF STRUCTURE:</b>	30.5		
<b>OVERALL HEIGHT AMSL:</b>	32.6		
<b>FAA STUDY NUMBER:</b>	00-AWP-3245-OE		
<b>FAA CIRCULAR NUMBER:</b>			

***Environmental FirstSearch  
Site Detail Report***

**Target Property:** PA HONUA  
KAILUA HI 96734

**JOB:** 052207  
RE-RUN ADDITIONAL DATABASES

STATE

<b>SEARCH ID:</b> 1	<b>DIST/DIR:</b> 0.94 SW	<b>MAP ID:</b> 3
---------------------	--------------------------	------------------

<b>NAME:</b> KANEOHE RANCH <b>ADDRESS:</b> 55 KAILUANA PL KAILUA HI 96734  <b>CONTACT:</b>	<b>REV:</b> 07/24/06 <b>ID1:</b> HIST_421 <b>ID2:</b> <b>STATUS:</b> <b>PHONE:</b>
--	--

<b>Filed Under:</b>	<i>Kaneohe Ranch</i>
<b>Unit:</b>	<i>Kaneohe Ranch</i>
<b>Federal ID:</b>	
<b>Agreement Program:</b>	<i>State Site</i>
<b>Funding:</b>	
<b>Sitelist Name:</b>	<i>Kaneohe Ranch</i>
<b>Supplemental Location:</b>	
<b>Activity Type:</b>	<i>Unregulated UST</i>
<b>Comments:</b>	
<b>IC:</b>	
<b>Status:</b>	<i>SDAR NFA</i>
<b>Assignment Date:</b>	<i>9/30/2005</i>
<b>Activity Lead:</b>	<b>(b) (6)</b>
<b>Restricted Use:</b>	<i>This site is available for unrestricted use.</i>
<b>End Date:</b>	<i>3/10/2006</i>
<b>End Fill:</b>	<i>3/10/2006</i>
<b>Result Fill:</b>	<i>NFA Letter Issued</i>

## Environmental FirstSearch Descriptions

**NPL: EPA NATIONAL PRIORITY LIST** - The National Priorities List is a list of the worst hazardous waste sites that have been identified by Superfund. Sites are only put on the list after they have been scored using the Hazard Ranking System (HRS), and have been subjected to public comment. Any site on the NPL is eligible for cleanup using Superfund Trust money.

A Superfund site is any land in the United States that has been contaminated by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.

FINAL - Currently on the Final NPL

PROPOSED - Proposed for NPL

**NPL DELISTED: EPA NATIONAL PRIORITY LIST Subset** - Database of delisted NPL sites. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

DELISTED - Deleted from the Final NPL

**CERCLIS: EPA COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM (CERCLIS)**- CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL.

PART OF NPL- Site is part of NPL site

DELETED - Deleted from the Final NPL

FINAL - Currently on the Final NPL

NOT PROPOSED - Not on the NPL

NOT VALID - Not Valid Site or Incident

PROPOSED - Proposed for NPL

REMOVED - Removed from Proposed NPL

SCAN PLAN - Pre-proposal Site

WITHDRAWN - Withdrawn

**NFRAP: EPA COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM ARCHIVED SITES** - database of Archive designated CERCLA sites that, to the best of EPA's knowledge, assessment has been completed and has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

NFRAP – No Further Remedial Action Plan

P - Site is part of NPL site

D - Deleted from the Final NPL

F - Currently on the Final NPL

N - Not on the NPL

O - Not Valid Site or Incident

P - Proposed for NPL

R - Removed from Proposed NPL

S - Pre-proposal Site

W – Withdrawn

**RCRA COR ACT: EPA RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES** - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984. RCRAInfo facilities that have reported violations and subject to corrective actions.

**RCRA TSD: EPA RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM**

**TREATMENT, STORAGE, and DISPOSAL FACILITIES.** - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.

Facilities that treat, store, dispose, or incinerate hazardous waste.

**RCRA GEN: EPA RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM GENERATORS** - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984. Facilities that generate or transport hazardous waste or meet other RCRA requirements.

LGN - Large Quantity Generators

SGN - Small Quantity Generators

VGN – Conditionally Exempt Generator.

Included are RAATS (RCRA Administrative Action Tracking System) and CMEL (Compliance Monitoring & Enforcement List) facilities.

**RCRA NLR: EPA RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES** - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.

Facilities not currently classified by the EPA but are still included in the RCRAInfo database. Reasons for non classification:

Failure to report in a timely matter.

No longer in business.

No longer in business at the listed address.

No longer generating hazardous waste materials in quantities which require reporting.

**Federal IC / EC: EPA BROWNFIELD MANAGEMENT SYSTEM (BMS)** - database designed to assist EPA in collecting, tracking, and updating information, as well as reporting on the major activities and accomplishments of the various Brownfield grant Programs.

**FEDERAL ENGINEERING AND INSTITUTIONAL CONTROLS-** Superfund sites that have either an engineering or an institutional control. The data includes the control and the media contaminated.

**ERNS: EPA/NRC EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS)** - Database of incidents reported to the National Response Center. These incidents include chemical spills, accidents involving chemicals (such as fires or explosions), oil spills, transportation accidents that involve oil or chemicals, releases of radioactive materials, sightings of oil sheens on bodies of water, terrorist incidents involving chemicals, incidents where illegally dumped chemicals have been found, and drills intended to prepare responders to handle these kinds of incidents. Data since January 2001 has been received from the National Response System database as the EPA no longer maintains this data.

**Tribal Lands: DOI/BIA INDIAN LANDS OF THE UNITED STATES** - Database of areas with boundaries established by treaty, statute, and (or) executive or court order, recognized by the Federal Government as territory in which American Indian tribes have primary governmental authority. The Indian Lands of the United States map layer shows areas of 640 acres or more, administered by the Bureau of Indian Affairs. Included are Federally-administered lands within a reservation which may or may not be considered part of the reservation.

**State/Tribal Brownfields: HI DOH STATE BROWNFIELDS LISTING**-The Hawaii Department of Health's Office of Hazard Evaluation and Emergency Response (HEER) inventory of brownfields sites.

**State/Tribal Sites: HI DOH STATE RESPONSE LISTING**-The Hawaii Department of Health's Office of Hazard Evaluation and Emergency Response (HEER) inventory of facilities, sites, or areas in which HEER has

an interest, has investigated, or may investigate under HRS 128D (includes CERCLIS sites).

**State/Tribal VCP:** *HI DOH* VOLUNTARY RESPONSE PROGRAM LISTING-The Hawaii Department of Health's Office of Hazard Evaluation and Emergency Response (HEER) inventory of sites participating in the state's Voluntary Response Program.

**State/Tribal IC:** *HI DOH* INSTITUTIONAL CONTROLS LISTING-The Hawaii Department of Health's Office of Hazard Evaluation and Emergency Response (HEER) inventory of sites with institutional controls.

**State/Tribal LUST:** *HI DOH* LEAKING UNDERGROUND STORAGE TANKS-The Hawaii Department of Health's inventory of sites with leaking underground storage tanks.

**State/Tribal UST/AST:** *HI DOH* UNDERGROUND STORAGE TANKS- The Hawaii Department of Health's inventory of underground storage tanks.

**State ACEC:** *USFWS* US FISH AND WILDLIFE CONTACT INFORMATION - database of contact information for the US Fish and Wildlife Service loaded by zipcode.

**Wetlands:** *US FWS* NATIONAL WETLANDS INVENTORY (NWI) - database of information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats. This data is available for select areas of the United States.

**Floodplains:** *FEMA* FLOODPLAINS – database of 100 year and 500 year flood zone boundaries for select counties in the United States

**Historic Landmarks:** *NPS* NATIONAL REGISTRY OF HISTORIC PLACES DATABASE - The nation's official list of cultural resources worthy of preservation. Properties listed include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture.

**Federal Land Use:** *USGS/EPA/FWS* FEDERAL LANDS OF THE UNITED STATES - Database of lands owned or administered by the Federal Government, including the Bureau of Land Management, the Bureau of Reclamation, the U.S. Department of Agriculture Forest Service, the Department of Defense, the U.S. Fish and Wildlife Service, the National Park Service, the Tennessee Valley Authority, and other agencies. Only areas of 640 acres or more are included. Descriptive information includes the name and type of the Federal land and the administering agency.

ENDANGERED SPECIES PROTECTION PROGRAM DATABASE – List of the Endangered Species by county and the species status./n NATIONAL WILDLIFE REGUGE DATA - database of boundaries for National Wildlife Refuges, National Fish Hatcheries, and USFWS administrative sites. Contains information regarding refuge name and contact information.

**Federal Wells:** *USGS* UNITED STATES GROUND-WATER SITES INVENTORY - Database of more than 850,000 records of wells, springs, test holes, tunnels, drains, and excavations in the United States.

**FAA/FTC Towers:** *FAA/FCC* Tower - database encompasses three sources of information from the Federal Aviation Administration and the Federal Communications Commission. FAA data includes the Digital Obstacle File which contains obstruction data for man made objects that affect domestic aeronautical charting products. FCC data includes the Wireless Telecommunication Bureau's Universal Licensing System which contains the Antenna Structure Database and the Cellular Tower Database. FCC data also includes the Mass Media Bureau's Consolidated Database System which includes engineering data for AM, FM, and Television broadcasting stations.

**NPDES:** *EPA* THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM - Database of permitted facilities receiving and discharging effluents to and from a natural source where treatment of the effluent is monitored.

**FINDS:** *EPA* FACILITY INDEX SYSTEM(FINDS)/FACILITY REGISTRY SYSTEM(FRS) - The index of identification numbers associated with a property or facility which the EPA has investigated or has been made aware of in conjunction with various regulatory programs. Each record indicates the EPA office that may have files on the site or facility. A Facility Registry System site has an FRS in the status field.

**TRIS:** *EPA* TOXIC RELEASE INVENTORY SYSTEM (TRIS)– Database that contains information on

toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as federal facilities. This inventory was established under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and expanded by the Pollution Prevention Act of 1990.

**HMIRS:** *US DOT* HAZARDOUS MATERIALS INCIDENT RESPONSE SYSTEM - Database of information regarding materials, packaging, and a description of events for tracked incidents.

**NCDB:** *EPA* NATIONAL COMPLIANCE DATA BASE SYSTEM - Database of regional compliance and enforcement activity and manages the Pesticides and Toxic Substances Compliance and Enforcement program at a national level. The system tracks all compliance monitoring and enforcement activities from the time an inspector conducts an inspection until the time the inspector closes or the case settles the enforcement action. NCDB is the national repository of the 10 regional and Headquarters FIFRA/TSCA Tracking System (FTTS). Data collected in the regional FTTS is transferred to NCDB to support the need for monitoring national performance of regional programs.

**PADS:** *EPA* DATABASE OF PCB HANDLERS - Database of PolyChlorinatedBiPhenol generators, transporters, storers and/or disposers that are required to register with the EPA. This database indicates the type of handler and registration number. Also included is the PCB Transformer Registration Database.

**RADON:** *NTIS* NATIONAL RADON DATABASE - EPA radon data from 1990-1991 national radon project collected for a variety of zip codes across the United States.

**Federal Other:** *EPA* SECTION SEVEN TRACKING SYSTEM (SSTS) – database of registration and production data for facilities which manufacture pesticides.

## Environmental FirstSearch Database Sources

**NPL: EPA** Environmental Protection Agency

*Updated quarterly*

**NPL DELISTED: EPA** Environmental Protection Agency

*Updated quarterly*

**CERCLIS: EPA** Environmental Protection Agency

*Updated quarterly*

**NFRAP: EPA** Environmental Protection Agency.

*Updated quarterly*

**RCRA COR ACT: EPA** Environmental Protection Agency.

*Updated quarterly*

**RCRA TSD: EPA** Environmental Protection Agency.

*Updated quarterly*

**RCRA GEN: EPA** Environmental Protection Agency.

*Updated quarterly*

**RCRA NLR: EPA** Environmental Protection Agency

*Updated quarterly*

**Federal IC / EC: EPA** Environmental Protection Agency

*Updated quarterly*

**ERNS: EPA/NRC** Environmental Protection Agency

*Updated semi-annually*

**Tribal Lands: DOI/BIA** United States Department of the Interior

*Updated annually*

**State/Tribal Brownfields: HI DOH** Office of Hazard Evaluation and Emergency Response, Hawaii State



Department of Health

*Updated biannually*

**State/Tribal Sites:** *HI DOH* Office of Hazard Evaluation and Emergency Response, Hawaii State Department of Health

*Updated biannually*

**State/Tribal VCP:** *HI DOH* Office of Hazard Evaluation and Emergency Response, Hawaii State Department of Health

*Updated biannually*

**State/Tribal IC:** *HI DOH* Office of Hazard Evaluation and Emergency Response, Hawaii State Department of Health

*Updated biannually*

**State/Tribal LUST:** *HI DOH* The Hawaii Department of Health, Solid and Hazardous Waste Branch

*Updated biannually*

**State/Tribal UST/AST:** *HI DOH* The Hawaii Department of Health, Solid and Hazardous Waste Branch

*Updated biannually*

**State ACEC:** *USFWS* United States Fish and Wildlife Services

*Updated semi-annually*

**Wetlands:** *US FWS* U.S. Fish and Wildlife Service

*Updated when available*

**Floodplains:** *FEMA* Federal Emergency Management Agency

*Updated when available*

**Historic Landmarks:** *NPS* National Park Service

*Updated annually*

**Federal Land Use:** *USGS/EPA/FWS* U.S. Geological Survey

*Updated annually*

**Federal Wells:** *USGS* United States Geographical Survey.

*Updated annually*

**FAA/FTC Towers:** *FAA/FCC* Federal Aviation Administration

*Updated*

**NPDES:** *EPA* Environmental Protection Agency

*Updated quarterly*

**FINDS:** *EPA* Environmental Protection Agency

*Updated annually*

**TRIS:** *EPA* Environmental Protection Agency.

*Updated quarterly*

**HMIRS:** *US DOT* US Department of Transportation

*Updated quarterly*

**NCDB:** *EPA* Environmental Protection Agency

*Updated quarterly*

**PADS:** *EPA* Environmental Protection Agency

*Updated quarterly*

**RADON:** *NTIS* Environmental Protection Agency, National Technical Information Services

*Updated periodically*

**Federal Other:** *EPA* Environmental Protection Agency

*Updated quarterly*

***Environmental FirstSearch***  
***Street Name Report for Streets within .25 Mile(s) of Target Property***

**Target Property:** PA HONUA  
KAILUA HI 96734

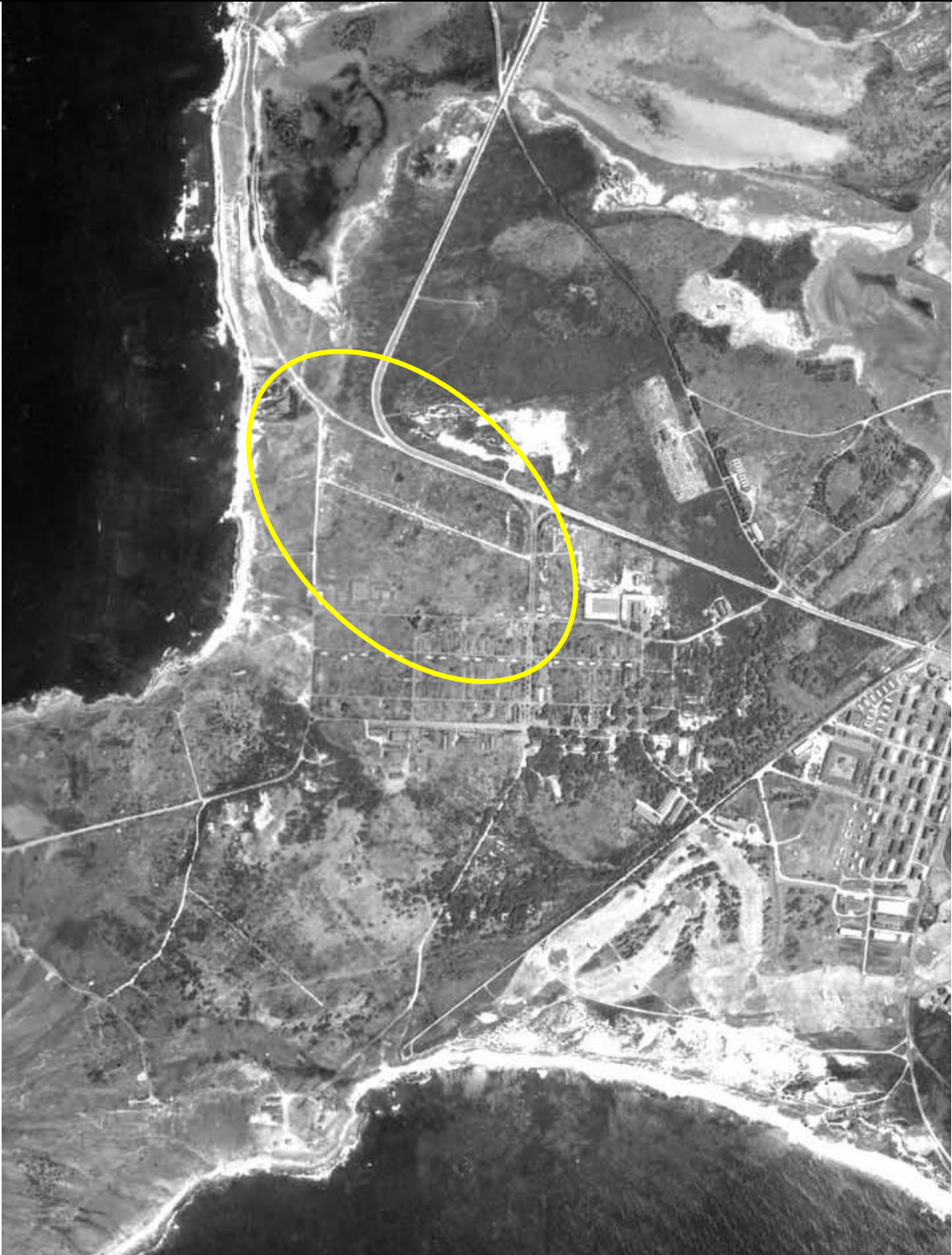
**JOB:** 052207  
RE-RUN ADDITIONAL DATABASES

<b>Street Name</b>	<b>Dist/Dir</b>	<b>Street Name</b>	<b>Dist/Dir</b>
Middaugh St	0.00 --		
Cochran St	0.00 --		
Hawkins Pl	0.00 --		
Hawkins St	0.00 --		
NOCOVERAGE	0.00 --		
Canney Cir	0.00 --		
English St	0.00 --		
Phillips St	0.00 --		
Harris Ct	0.00 --		
Moses St	0.00 --		
Dodson St	0.00 --		
Mokapu Rd	0.00 --		
Harris Ave	0.00 --		
Hanson Cir	0.00 --		
Irwin St	0.00 --		
Titcomb Cir	0.00 --		
Mac Lachlan St	0.00 --		
McLennan Dr	0.02 NE		
Mahannah Cir	0.02 NE		
SOUTH Lawrence Rd	0.03 NE		
S Lawrence Rd	0.03 NE		
Lawrence Dr	0.03 NE		
Brown Dr	0.06 NE		
Fleming Cir	0.06 NE		
Parks Ave	0.06 NW		
Campion Dr	0.08 NE		
Maxam Pl	0.10 NE		
Marmande Dr	0.12 NE		
Elrod Dr	0.14 NE		
Johnson St	0.14 NE		
Cushman Ave	0.15 NW		
Cabanayan St	0.16 NW		
Bordelon Loop	0.17 NE		
Daly Rd	0.21 NE		
Malabey Ct	0.21 NW		
Selden St	0.23 SW		
Pascua Ct	0.24 NW		
Craig Ave	0.25 NW		

## Appendix B

### HISTORICAL AERIAL PHOTOGRAPHS





Source: Track Info Services



NORTH

NO SCALE

1950 Historical Aerial Photograph  
Pa Honua Family Housing Area



Source: Track Info Services



NORTH

NO SCALE

1969 Historical Aerial Photograph  
Pa Honua Family Housing Area





Source: *Track Info Services*

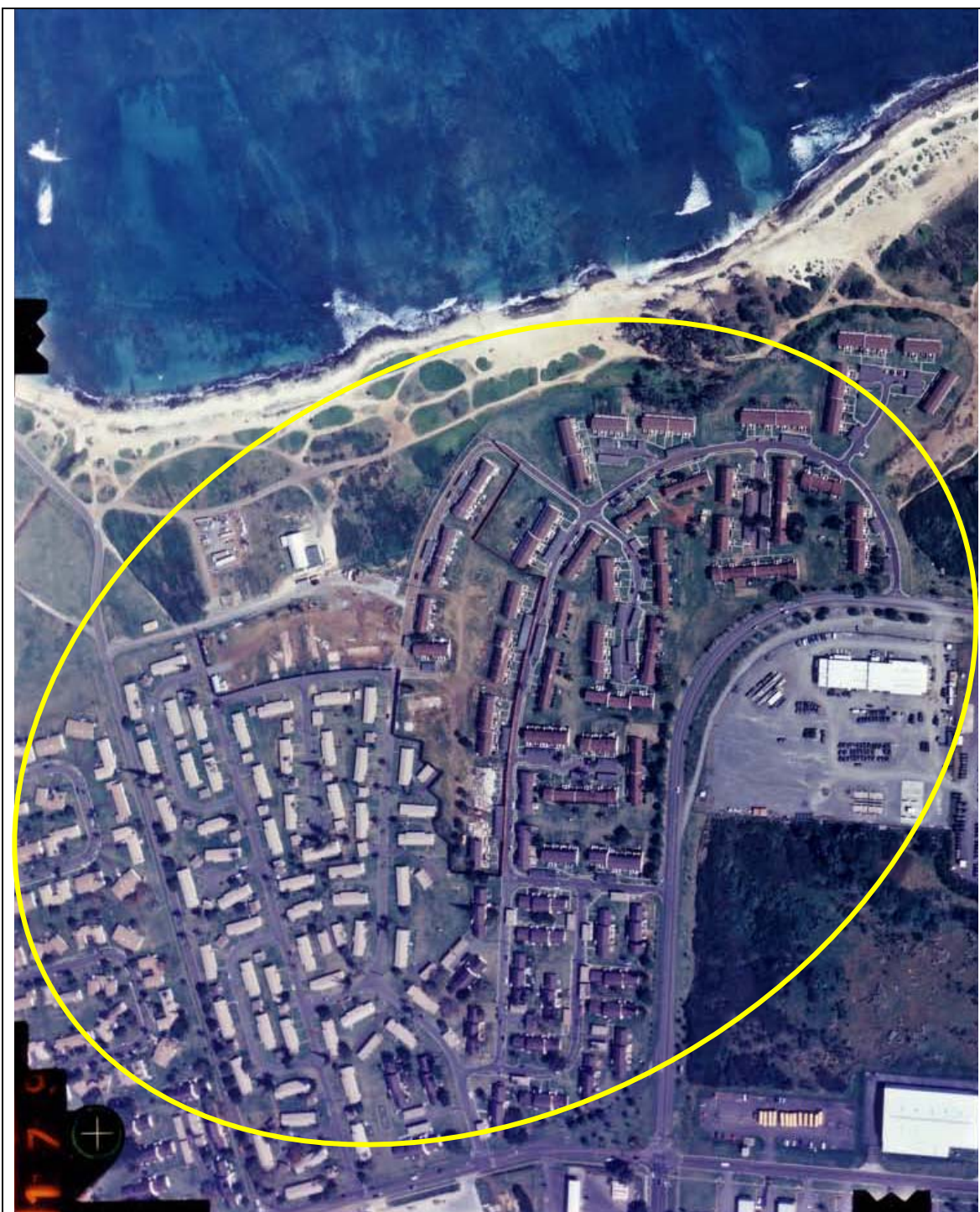


NORTH

NO SCALE

1990 Historical Aerial Photograph  
Pa Honua Family Housing Area





Source: Track Info Services



NORTH

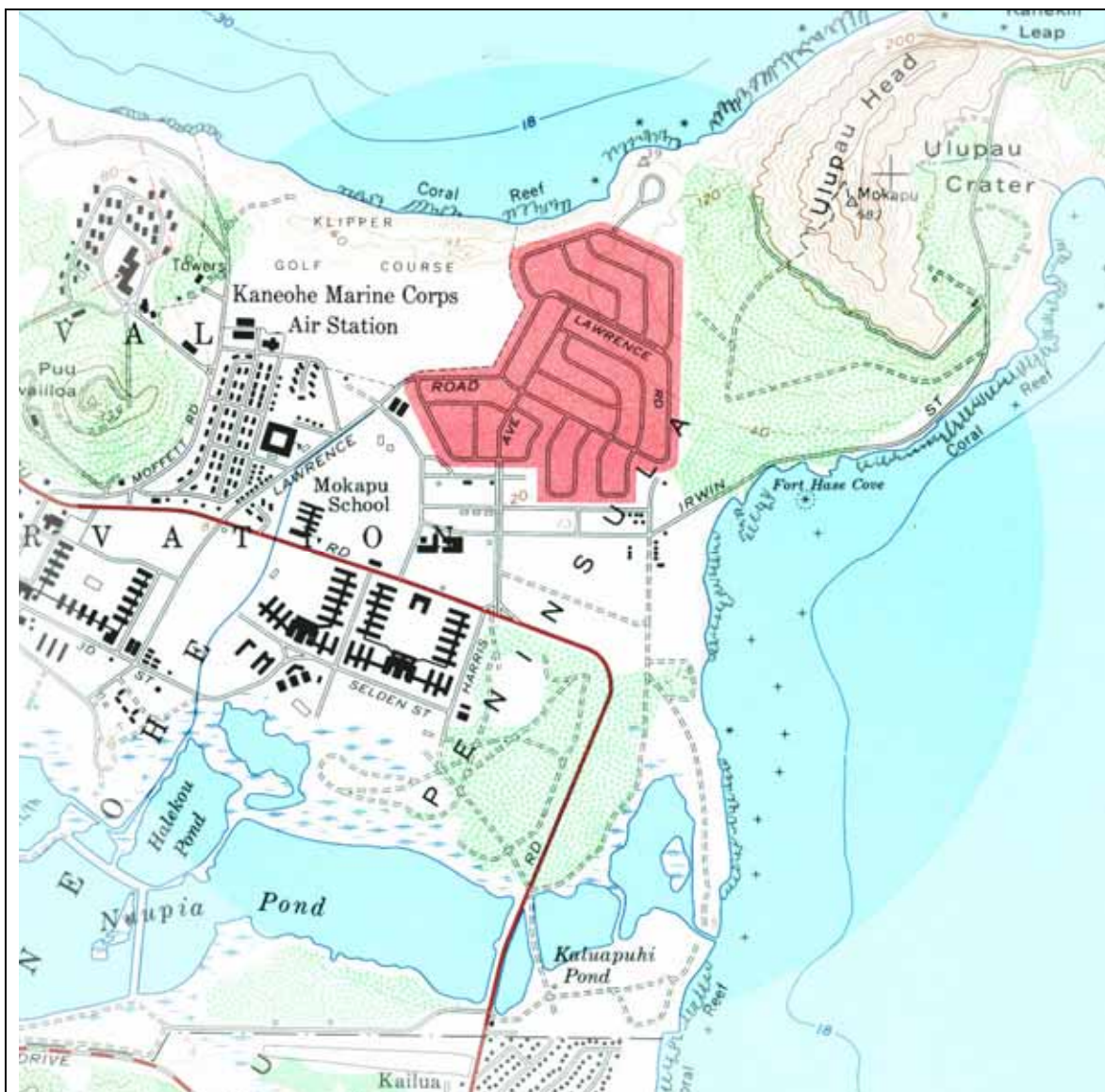
NO SCALE

1998 Historical Aerial Photograph  
Pa Honua Family Housing Area

## Appendix C

### HISTORICAL TOPOGRAPHICAL MAPS





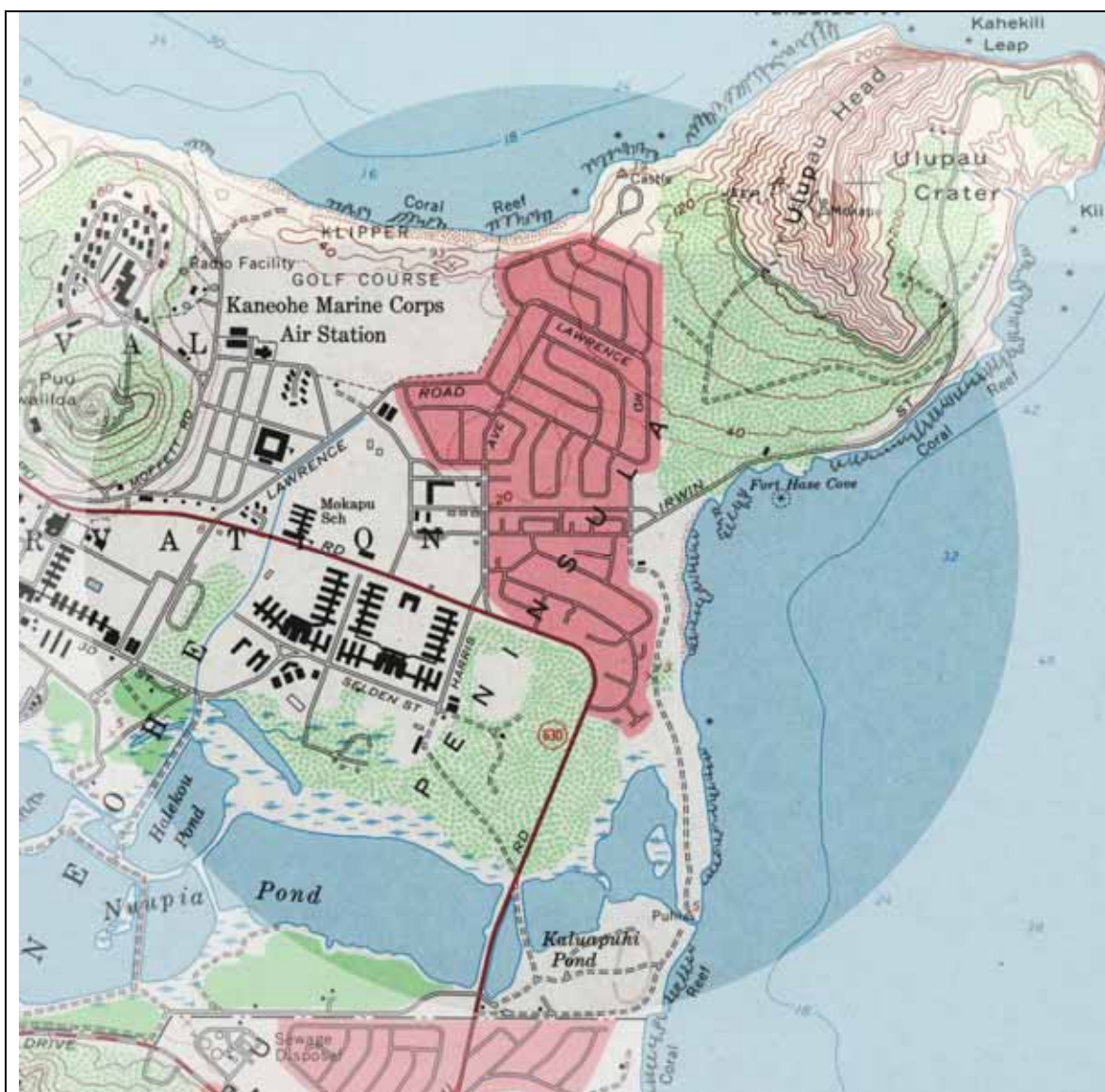
Source: USGS Mokapu, Hawaii Quadrangle, 7.5 Minute Series, 1959 (modified)



1 inch = 1670 feet  
SCALE

1959 Historical Topographic Map  
Pa Honua Family Housing Area





*Source: USGS Mokapu, Hawaii Quadrangle, 7.5 Minute Series, 1968 (modified)*



1 inch = 1670 feet  
SCALE

1968 Historical Topographic Map  
Pa Honua Family Housing Area



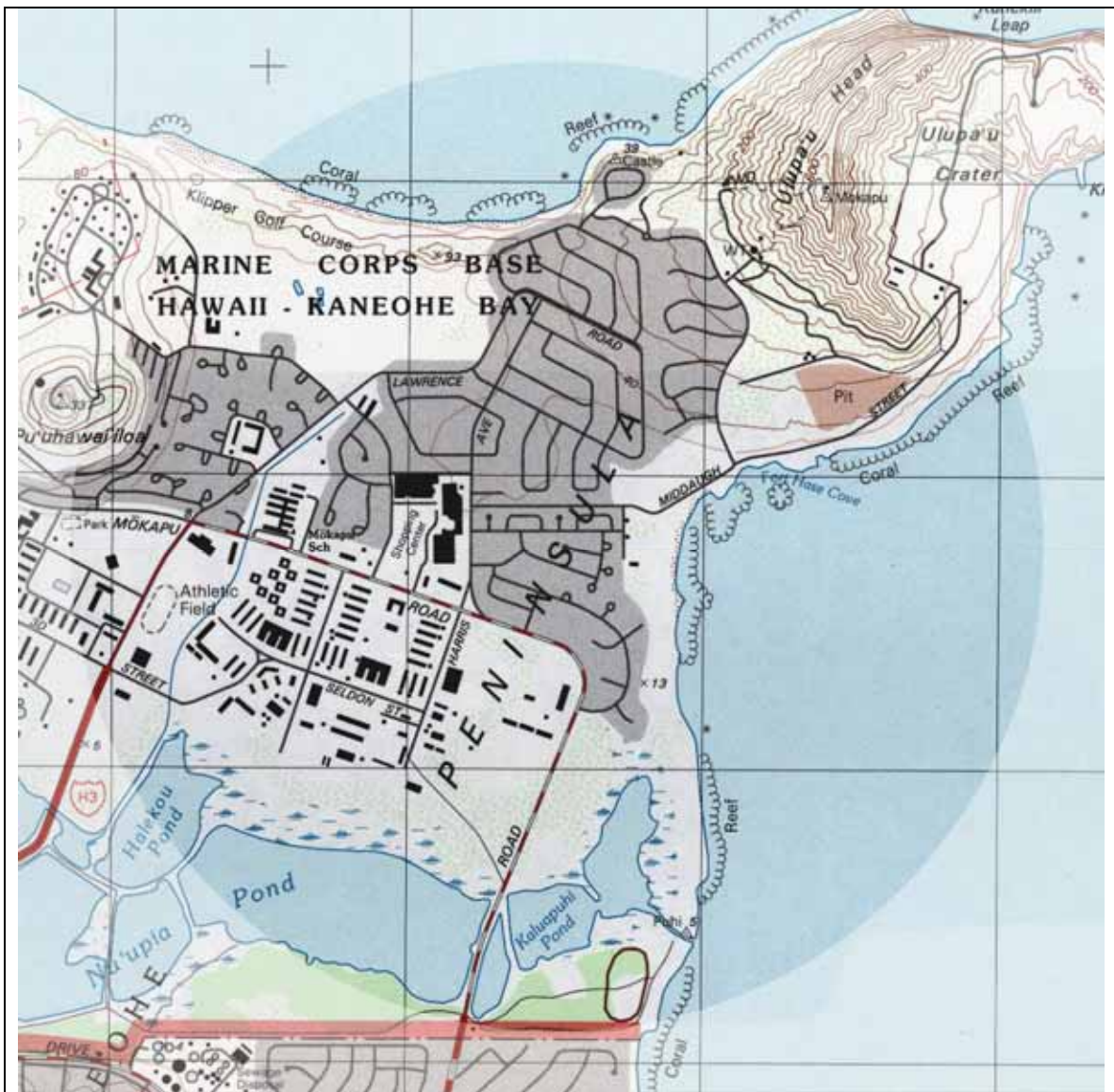
Source: USGS Mokapu, Hawaii Quadrangle, 7.5 Minute Series, 1983 (modified)



1 inch = 1670 feet  
SCALE

1983 Historical Topographic Map  
Pa Honua Family Housing Area





Source: USGS Mokapu, Hawaii Quadrangle, 7.5 Minute Series, 1998 (modified)



NORTH



1 inch = 1667 feet  
SCALE

1998 Historical Topographic Map  
Pa Honua Family Housing Area